DEP SPECIFICATION

ENGINEERING INFORMATION SPECIFICATION (EIS)

DEP 82.00.10.30-Gen.

February 2012

(Amendment A01 has been incorporated - February 2013)

DESIGN AND ENGINEERING PRACTICE

DEM1

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PREFACE

DEP (Design and Engineering Practice) publications reflect the views, at the time of publication, of Shell Global Solutions International B.V. (Shell GSI) and, in some cases, of other Shell Companies.

These views are based on the experience acquired during involvement with the design, construction, operation and maintenance of processing units and facilities. Where deemed appropriate DEPs are based on, or reference international, regional, national and industry standards.

The objective is to set the standard for good design and engineering practice to be applied by Shell companies in oil and gas production, oil refining, gas handling, gasification, chemical processing, or any other such facility, and thereby to help achieve maximum technical and economic benefit from standardization.

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.

When Contractors or Manufacturers/Suppliers use DEPs, they shall be solely responsible for such use, including the quality of their work and the attainment of the required design and engineering standards. In particular, for those requirements not specifically covered, the Principal will typically expect them to follow those design and engineering practices that will achieve at least 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.

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1) Operating Units having a Service Agreement with Shell GSI or another Shell Company. The use of DEPs by these Operating Units is subject in all respects to the terms and conditions of the relevant Service Agreement.

2) Other parties who are authorised to use DEPs subject to appropriate contractual arrangements (whether as part of a Service Agreement or otherwise).

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 the engineering information that the Contractor and the Manufacturers/Suppliers shall deliver to the Principal while reducing the need to reclassify, reformat and rework information at handover points during the project lifecycle.

This DEP contains mandatory requirements to mitigate process safety risks in accordance with Design Engineering Manual DEM 1 – Application of Technical Standards.

This DEP specifies the Principal's standard requirements for information and may be supplemented with additional requirements necessary to meet local needs. The exact information requirements the Contractor shall deliver will be dependent on the Contractual scope. The Principal shall define the exact information requirements and any deviations or additions from this DEP in a contract specific Information Management Scope of Work (IM SoW) and IM Specification.

This DEP specifies requirements in terms of data and documents for all phases of engineering projects and as such may exceed the scope of what is delivered in a specific contract.

The overall objective is to ensure that the Contractor delivers to the Principal the minimum information required to effectively manage its assets and business, structured in a way that supports the Principal's engineering, operations and maintenance processes.

Sections (3) and (4) of this DEP describe the recognised information that the Principal may require to be handed over and the rules for the handover for documents and data, respectively. (Appendix A) contains definitions of the formats of different EIS Objects and details of their formats. Information requirements are continually developing as business processes develop, so the information published in this DEP is a snapshot at the time of publication.

This DEP does not address how information should be developed, how to verify information content, the applications used to generate the information or how it should be stored, retrieved, controlled or updated during the project or operations phases.

This is a revision of the DEP of the same number dated August 2009; 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.

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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 capitalised term **SHALL [PS]** indicates a process safety requirement.

The word **should** indicates a recommendation.

1.3.2 Specific definitions

Term	Definition
AI-PSM	Asset Integrity - Process Safety Management
Application	A computer program performing special functions. Sometimes also referred to as computer system.
Area	An Area represents a part of the geographical surface occupied by a Plant. Areas are created to identify the physical location of Equipment within a Plant.
CAD	Computer Aided Design
Class	Term used to classify things, e.g., a class of an equipment type could be a “pump”.
CMMS	Computerised Maintenance Management System
Controlled Document	A Controlled Document is a document which is registered in a recognised control system at a known status and ownership. A controlled document follows specific review and approval processes. Periodically it will have its content updated and revised.
CSV	Comma Separated Value
CTR	Cost, Time and Resources
Data	Information to be manipulated by tools, e.g., Spare Parts, Tag Register & Properties, Maintenance Routines, etc.
Discipline	Field of expertise, e.g., Mechanical Engineering.
Discipline Document Type	An association between disciplines and Document type names. In this DEP the term Discipline_Document_Type is a unique identifier for types of documents. This term has been developed to cater for situations where a given document type is common to more than one discipline.
Document	Information (Printed or Electronic) to be read by people, e.g., Reports, Specifications, Data sheets, Drawings, etc.
EDMS	Electronic Document Management System
EIS	Engineering Information Specification
EIS Object	Any entity that Principal requires to be represented by data.
EIS Property	A feature that further describes an EIS Object. Also called Characteristic or Attribute. For example, design temperature.

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Term	Definition
EIS Relation	A relationship between two EIS Objects.
EPC	Engineering Procurement and Construction (Contractor)
Equipment	Equipment is a physical object designed to perform a Tag function.
File	A collection of information stored electronically under a specific name
GRM	Group Records Management
IM SoW	Information Management Scope of Work
Information	The sum of documents and data.
Information Security	Information Security refers to the protection of information in its broadest sense and covers access to information, protection of information against intrusion and damage and the procedures necessary to maintain the integrity of information.
Intelligent Drawing	Drawing created and managed by an application as “data”. Intelligent drawings enable documents to be generated from data; they can include manufacturing know-how and design intelligence, e.g., they can include the rules to generate complex families of parts, generate bills of material, area or mass calculations, etc.
Metadata	Collection of attributes, formats and structure belonging to data or documents. For example, meta-data can describe data elements or attributes, (name, size, data type, etc.), specify formats (length, fields, columns, etc) and structure (where it is located, how it is associated, ownership, etc.). Metadata may include descriptive information about the context, quality, condition or other characteristics of the data or documents.
Model Part	A "Model Part" represents a type of Equipment that is manufactured by a Manufacturer.
Package, Packaged Unit	Preassembled collection of equipment designed to deliver a process function.
Page	A page is one side of a sheet.
PBS	Plant Breakdown Structure
PDMS	Plant Design Management System
PEFS	Process Engineering Flow Scheme(s) NOTE: Some locations use the term P&ID (Process and Instrumentation Diagram).
Plant	A plant is an assembly of Equipments, assembled to perform a physical or chemical process (This includes the processes of transportation and storage of materials). A Plant represents the "high level" function to be performed, and during the design, a Plant is decomposed in Process_Units and Tags.
Process Unit	Process Units are created to decompose the "high level" Plant function into more granular "sub-functions". This plant breakdown structure is used by the process engineer.
Rendition	Renditions are representations of a document in a different format. The content is identical. Renditions may be required for preservation or access/viewing purposes.
Revision	A code used to identify the content of a document at a certain point in time. It is used to track the evolution of a document during its lifecycle.
RRM	Risk and Reliability Management

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Term	Definition
SCE	Safety Critical Element
Sheet	A sheet is a single piece of paper and is often a one-sheet drawing.
Site	A site represents a geographical surface that can be identified on a map.
Tag	Tags are created to decompose a "high level" Process Unit function into more granular "sub-functions".
Tag register	List of all tags at a plant.
Transmittal	Record which accompanies a document or set of documents. It describes documents that should receive the reader's consideration, and what the reader should do with the document(s). It often contains important dates or deadlines that the reader should be aware of.
Uncontrolled Document	An Uncontrolled document is a general working document. This includes e-mails and documents stored in 'My Documents' or on network drives.
Vendor	A Manufacturer/Supplier that supplies goods or services.

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 by this DEP are listed in (5).

1.5 SUMMARY OF MAIN CHANGES

This DEP is a revision of the DEP of the same number dated August 2009. This is a major rewrite of the DEP. The following are the main, non-editorial changes.

Old section	New section	Change
4.7 and 4.8	N/A	The section on Maintenance Information and Corrosion Data has been removed from this DEP as Maintenance Management System Build and Corrosion/Inspection Management System is typically not performed by the Contractor. Separate specifications for Maintenance Management System Build have been developed.
4.12	N/A	The section on Project Control Data has been removed as it is detailed in separate Project Services standards.
N/A	2.2	Section on International Standards added. Contains relevant content from retired DEP 70.00.00.10-Gen.
N/A	3.7	Section on Equipment Record Cards added. Contains content from retired DEP 70.10.01.10-Gen.

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	1.6	Feedback process updated.
	2.3	Added the word "services" to the last bulleted item.
	5	Removed reference to DEP 32.31.00.80-Gen. Added DEP Feedback Form - DEP 00.00.05.80-Gen. Added DEM1 reference with link.
	Appendix B	Removed reference to DEP 32.31.00.80-Gen.

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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://sww.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.

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2. GENERAL

2.1 CONTRACT INFORMATION MANAGEMENT SCOPE OF WORK

Since complete and accurate information is crucial for the safe and efficient operation of a plant, the Principal shall issue a Project Contract IM SoW and Information Specification based on this DEP to define the exact deliverables for a particular contract.

2.2 INTERNATIONAL STANDARDS APPROVED FOR USE

The following standards are approved for use without amendments:

- ISO 14224:2006

The descending order of precedence for requirements shall be:

- Regulatory requirements;
- Project Contract IM SoW and Information Specification, including pre-purchase correspondence, clarifications and notes of pre-selection and pre-award meetings;
- Design and Engineering Practice (i.e., this DEP);
- International Standards;

2.3 INFORMATION SECURITY

Refer to (1.3.2) for definition of Information Security.

The Contractor shall ensure compliance with the Principal's Information Security requirements and ensure processes and procedures are in place to safeguard business continuity and minimise business damage. Particular focus should be placed on ensuring:

- Confidentiality, protecting sensitive information from unauthorised disclosure.
- Integrity, safeguarding the accuracy and completeness of information.

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- Availability, ensuring the project information and associated services are available to users as required.

Contractor should be guided by ISO 17799.

2.4 EXPORT CONTROLS

The Contractor shall ensure all deliverables are classified and assigned an appropriate Export Control Classification Number (ECCN), and that the classification is clearly displayed on all deliverables.

The Principal shall provide the classifications to be used.

The Contractor shall ensure awareness and compliance with the necessary Export Controls at all times.

2.5 APPLICATIONS USED BY CONTRACTOR

The Principal may mandate the use of specific applications or templates for the development and handover of deliverables; for example, PDMS may be specified to produce 3D models. The Principal may host certain applications and provide remote access to the Contractor.

Where the Principal mandates the use of a particular application or template, the Contractor shall obtain the written approval of the Principal before making any changes to the application or template.

If specific applications or templates are not mandated by the Principal, the Contractor may use its own applications to produce deliverables. Where the Contractor needs to convert from one format to the Principal's required format, the Contractor shall be responsible for

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demonstrating the conversion is done without loss of quality and shall be responsible for any additional costs incurred.

If intelligent drawings are used by the Contractor, these files shall be delivered to the Principal, including all configuration, reference files and libraries such that a fully operable application can be created elsewhere. The structure of the library and data files shall be approved by the Principal prior to creation.

2.6 INFORMATION FROM SUBCONTRACTORS

The Contractor shall ensure all information originated by the Subcontractors and Manufacturer/Suppliers comply with the Principal's requirements.

The Contractor shall be responsible for any additional effort or costs associated with ensuring the information supplied by the Subcontractors complies with the Principal's requirements.

2.7 REFERENCE DATA

The Principal shall formally issue the Contractor a set of reference data after the commencement of the Contract.

The Contractor shall ensure all information delivered to the Principal complies with this reference data. Where the Contractor is unable to utilise the Principal's reference data directly in its business processes and applications, the Contractor shall map their existing reference data to the Principal's.

Application of the reference data by the Contractor shall determine the Principal's information requirements, for example:

- If a Tag is classified as a centrifugal pump, the reference data will identify which properties for that pump need to be delivered by the Contractor. The property requirements would be different if a different classification is used.
- If a Document is classified as a Process Engineering Flow Scheme (PEFS), this will identify the final revision of the document to be handed over is required As Built; that the native file is required and whether a translation or hardcopy is required.

The Principal may revise the reference data during the execution of the works. The Principal shall formally transmit any updates to the Contractor, highlighting any changes. The Contractor shall replace any earlier revisions of the reference data and ensure future compliance with the new revision.

If the Contractor is unable to comply with any of the requirements resulting from the application of the Principal's reference data, the Contractor shall obtain written permission from the Principal for any deviations.

2.8 INFORMATION REVIEW AND APPROVAL BY PRINCIPAL

The Contractor shall be accountable for information quality. Information quality shall be managed at source by the Contractor and shall not rely on Principal review to highlight issues.

The Contractor shall employ an internal information review process that ensures the appropriate technical authorities review and comment on all new or revised information.

The Principal shall reject any information issued by the Contractor that has not been duly signed as checked and approved by the Contractor.

The Principal shall also review and approve some deliverables to ensure compliance with the Principal's technical approval requirements. Acceptance of information by the Principal does not relieve the Contractor of responsibility for design accuracy or for compliance with applicable codes, standards or contractual requirements.

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2.9 INFORMATION HANDOVER

The Principal shall define details of the timing and process for information handover in a Contract IM SoW.

All information handed over by the Contractor, whether intermediate or final, shall be included in a formal transmittal.

Prior to submitting the formal transmittal, the Contractor shall ensure;

a) The information is numbered correctly and signed off to the appropriate level of authority.

b) The correct template has been used.

c) The information is structured in accordance with the Contract IM Specification.

d) The information is classified using the Principal's reference data.

e) All files have been virus checked.

2.10 INFORMATION FORMATS

Unless otherwise specified in the Contract IM Specification, the Contractor shall deliver information in the format defined in this DEP. The order in which the information appears in the definition tables (i.e., the column arrangement) is also the order in which the information shall be delivered.

Formats for defined EIS Objects shall not be changed during the project unless agreed by the Principal.

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3. DOCUMENTS

3.1 GENERAL

The Principal shall define in the reference data (2.7) the requirements for different types of documents, for example, format, status, translation and hardcopy requirements, etc.

The Contractor SHALL [PS] handover all documents identified by Principal as required as "As Built" (red lined before start up and electronically within three months of start-up). Delivery of all documentation (including hardcopies) shall be complete within six months of start-up.

The Contractor shall not deliver 'generic' As Built or final documents (i.e., a document that applies to more than one identical system/train in a plant) as during the operations phase the different systems/trains may be modified independently. "Generic" documents may be used up to AFC to support design repeatability/replication but these must be made "specific" for the final handover and As Builts.

The Contractor shall ensure the requirements below are applied to all documents created as part of their scope, including those originated by the Subcontractors and Manufacturers/Suppliers.

3.2 CONTROLLED/UNCONTROLLED DOCUMENTS

A document can be considered as either controlled or uncontrolled.

The Contractor shall treat all deliverables to be handed over to the Principal as Controlled Documents and shall implement an Electronic Document Management System (EDMS), configured to support the Principal's document control processes, including numbering, revision control, storage, searching, and retrieval of information.

3.3 DOCUMENT SPECIFICATION

(Appendix A, A.4) defines the standard EIS Objects, Properties and Relations recognised by the Principal for document handover.

The Principal shall define a Contract-specific IM SoW to identify the scope for the Contractor including any additional requirements or deviations from this DEP.

The rest of this section describes additional requirements not listed in (Appendix A, A.4).

3.3.1 Document numbering

The Contractor shall ensure all deliverables are numbered in accordance with the Principal's Document Numbering Specification. This document number shall be used consistently in the document content (electronic and hardcopy) and the metadata supplied for the document.

3.3.2 Revisions of a document

The Contractor shall produce a new revision whenever an update of a document is issued to the Principal for formal review, approval or distribution.

3.3.3 Discipline document type classification

The Discipline Document Type shall be used to classify documents to:

- Ensure the nature of the document content is understood before the document is opened.
- Specify common requirements for the documents with common content, for example the need to As Build all PEFS.
- Facilitate document searching.

The Contractor shall ensure all documents handed over to the Principal are assigned an appropriate Discipline Document Type (as per Principal's reference data (2.7)) and that all requirements of the relevant Discipline Document Type are satisfied.

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The Contractor shall not create documents containing the content of multiple Discipline Document Types (especially if the content may be updated independently) but split such documents into individual documents per Discipline Document Type. If necessary these may be formed into a book as described in (3.4.1).

3.4 DOCUMENT AND FILE REQUIREMENTS

3.4.1 Books (or binders) of documents

A book may be used to retain a natural grouping of documents (e.g., to record all the documents delivered in a Vendor Package, regardless of their discipline document type). The following rules shall apply to all books:

a) Create a separate document that only contains the index of the book, and classify it as a document type appropriate for the book.

b) Assign a unique document number to each document in the book.

c) Create a document-to-document reference between the index document and the various documents in the book.

3.4.2 File requirements

The Contractor shall ensure each document has at least one electronic file. The following shall apply to electronic files:

a) Each rendition of a document shall be delivered in a single electronic file.

b) Only drawings can have multiple sheets (for example PEFS), and each sheet shall have a separate document. Therefore, each sheet shall also be created as a single electronic file (multiple renditions of the same sheet may be delivered as multiple files).

c) Page sizes should be consistent within a document.

d) Any document that refers to a single Tag, item of Equipment or Model shall be delivered as a single file. For example, loop diagrams shall not be combined into a single document as this will make it harder to find and modify an individual loop diagram in future. If a book of loop diagrams is required, follow the rules for document books in (3.4.1).

e) Each electronic file shall be self-contained. It shall not require, or call, any other electronic files for viewing or updating purposes (e.g., X-Ref, shape files, fonts, templates, etc.). For example, binding files shall be used for AutoCAD.

f) The maximum file size for a document should be 30 MB, unless otherwise agreed by the Principal (e.g., for 3D CAD files). Larger files may be allowed for files that are accessed rarely.

g) Text documents containing pictures: a picture format should be used which provides sufficient print details at minimum picture size.

h) Electronic files shall accurately represent the information on the equivalent paper deliverable. The completeness of electronic files shall be the same as that of paper deliverables. Electronic native files need not contain the sign-off signatures for the current issue.

The file name shall consist of the document number, document revision and a sequence number followed by the file extension, for example T-00000002_X01-01.PDF. The following rules apply to file names:

- The file name shall only contain alphabetic, numeric, and underscore characters (no special characters are allowed). Underscore should replace any slashes (/ or \).
- The file name shall not imply any relevance. It shall be possible to rename the file without affecting the viewing or editing of that file or any other file.

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3.4.3 Set of files

The Contractor shall use Set_Of_Files (Appendix A, A.4.5), when multiple files are delivered against a single document number revision. Examples include:

- A document delivered in multiple renditions (e.g., a scanned PDF of the signed off document and an MS Word native file of a procedure).
- A document with an unacceptably large file size that has been divided into multiple files of acceptable size.
- A single document containing multiple file types (e.g., an MS Word® document with an MS Excel® appendix).
- A single document containing equivalent information in multiple languages.

The Contractor shall follow these rules when creating a Set of Files:

- Nominate the primary document and treat it in the same way as any other document, giving it a Document Number and Revision.
- Assign the same Document Number and Revision to all other (secondary) files in the Set. Each Document Title and File Name shall reflect the sequence of the files as they should appear in the complete document.

Table 1 Set of files examples

Example	Document Titles
A single document and native file	**Primary File** Compressor Station Layout **Native File** Compressor Station Layout (DWG)
A large file split into multiple files	**Primary File** Vendor Manual Centrifugal Pump Model XYZ **Subsequent File** Vendor Manual Centrifugal Pump Model XYZ Sections 1 to 5 (PDF) Vendor Manual Centrifugal Pump Model XYZ Sections 6 to 10 (PDF) Vendor Manual Centrifugal Pump Model XYZ Appendix 1 (PDF) Vendor Manual Centrifugal Pump Model XYZ (DOCX)
A single document containing multiple file types	**Primary File** PROJECT REFERENCE DATA PROCEDURE **Subsequent Native Files** PROJECT REFERENCE DATA PROCEDURE (DOCX) PROJECT REFERENCE DATA PROCEDURE (XLSX)
A single document containing multiple languages	**Primary File** Emergency Plan Section 1 English **Translated File** Emergency Plan Section 2 Russian

For large files, split into smaller files. See (3.4.2 f):

- The document should be split at natural section breaks (indicated by section markers).
- If the document has no natural section breaks but exceeds the allowable file size, the document should be broken at the file size limit.
- The primary file should contain the front sheet and table of contents.

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3.4.4 Files to be delivered

The Contractor shall deliver all documentation (final and intermediate revisions as required) electronically. A signed PDF rendition of all documents shall be delivered along with the native files where required by Principal.

Where the native format is paper, the Contractor shall create and deliver a PDF file.

If the native format cannot reasonably be converted to electronic media (for example radiographic films), the Contractor should deliver the non-electronic native format only. See (3.6) for Physical Record Handover requirements.

3.4.5 Image quality

The Contractor shall ensure PDF files are:

- Rendered directly from the authoring application as content searchable PDF format with commenting enabled, or
- Scanned directly from the hardcopy documents containing a wet signature and/or official stamp(s).

When scanning documents, the Contractor shall ensure:

a) Documents are scanned at their original size directly from the original hard copy.

b) Images are scanned in an orientation that allows viewing without rotation.

c) The scanned image file is split into a number of smaller files if it is too large, in compliance with (3.4.2 f).

d) All the information in a scanned document is legible.

e) The minimum scan resolution is 300 dpi. For scans of handwritten documents, the minimum scan resolution shall be 600 dpi.

f) The quality of scanned documents containing characters shall be measured by running an OCR scan on a printed version of the document and 99 % of the characters on the document shall be recognized without errors.

g) The minimum quality of scanned documents containing images is measured by comparison against an agreed image quality benchmark. The Contractor shall submit reference documents to be used for comparison to the Principal to determine acceptability.

3.4.6 Hyperlinks

The Contractor may use hyperlinks between information within the same file.

Contractor shall not use hyperlinks to the Contractor's Intranet or shared drives and should only use hyperlinks to Internet sites if there is a high degree of confidence that the link will not change.

The Contractor shall not use hyperlinks between different documents. Document-to-document relationships shall be used in accordance with (Appendix A, A.4.15).

3.4.7 Different languages

A document created in one language and translated to another language shall be managed as one of these alternatives:

- Preferred option: A single document generated combining multiple documents (e.g., Chapter 1 – English, Chapter 2 – Russian). In this case, they may exist as a single file, or a set of files in compliance with (3.4.3).
- Alternative 1: Create a Book referencing both Documents. See (3.4.1).
- Alternative 2: Two separate documents in two separate files.

The Principal shall advise the Contractor which approach shall be used. Only one method shall be applied throughout a project.

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The Contractor shall ensure processes and procedures are in place to ensure the quality of the translations. The Principal shall reject any translations that do not meet the Principal's quality standards.

Country code abbreviations used within file names or document titles should comply with ISO 3166-1.

3.4.8 Character set

The character set used for all information shall be ISO/IEC 8859-15.

Special characters shall not be used in attribute or classification fields. Examples are:

- à, á, â, ä, è, é, ê, ë, ô, ö, ü, ç, etc.
- !, , #, $, -, *, &, :, “, /,\, or carriage returns.

In attribute or classification fields, words that contain these characters shall be converted to standard characters as follows:

- Replace à, á, â and ä with a.
- Replace è, é, ê and ë with e.

A similar approach shall be followed for other special characters.

3.5 DOCUMENT REFERENCES

Document References are critical to enabling the Principal to quickly find information related to EIS Objects during the Commissioning and Operations Phases.

The Contractor shall identify EIS Objects that are referenced on documents and provide this data to the Principal in a document references file. See (Appendix A, A.4.8) to (Appendix A, A.4.16). The use of intelligent design tools significantly reduces the effort involved in preparing document references.

The ASSET_TYPE_REFERENCE property in DOCUMENT_TYPE (Appendix A, A.4.4) suggests the type of EIS Object that the document is expected to contain.

The Contractor shall ensure that Approved For Construction and later revisions are issued with a complete set of document references.

3.6 PHYSICAL RECORD REQUIREMENTS

The Principal's intention is to maximise electronic information exchange. However, to comply with local regulations or working practices, final delivery of both electronic and hardcopy (original signed) versions may be necessary. Paper or hardcopy is required for some legally binding agreements and for certificates carrying original signatures or marks that authenticate a document. These hardcopy formats shall be deemed to be the original native format.

The Contractor shall ensure that hardcopy and electronic renditions of the same document are identical at time of handover to the Principal.

The Contractor shall be responsible for maintaining and handing over all physical records (media files, X-rays, core samples, etc.) produced during the execution of the works as required by Principal.

3.7 EQUIPMENT RECORD CARDS

Equipment Record Cards (ERCs) may be used by the Principal's inspection and maintenance sections for establishing a basic record of the design and construction data for all items of installed equipment, and subsequently for building up the history of each item throughout its operational life.

ERCs can be used to make readily available, in concise form:

- all relevant data on a specific piece of equipment as installed at site;

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