

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1	Page 1/3
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TEMELÍN OPTION

EPC CONTRACT

CONTRACT SPECIFICATION

DOCUMENT NAME:	TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1
VERSION DATE:	March 2025

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1	Page 2/3
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CONTENT:

CHAPTER 1.1	INTRODUCTION
CHAPTER 1.2	PLANT DESIGN
CHAPTER 1.3	DESIGN DOCUMENTATION

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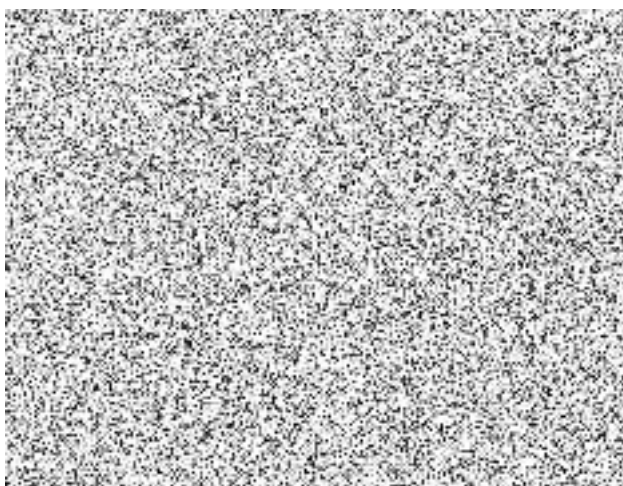
Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1	Page 3/3
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SIGNATURE PAGE

IN WITNESS WHEREOF the Owner* and the Supplier* have hereby signed the above listed parts of the EPC Contract*.

For and on behalf of the **OWNER, Elektrárna Dukovany II, a. s.**

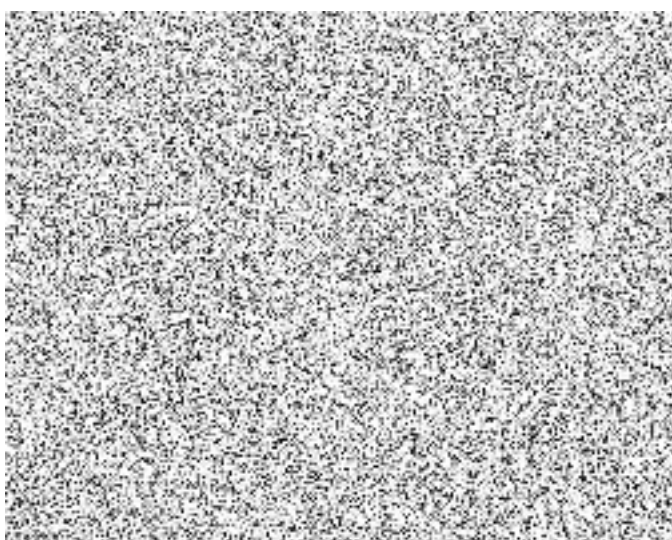
Signature
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For and on behalf of the **SUPPLIER, Korea Hydro & Nuclear Power Co., Ltd.**

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Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.1 INTRODUCTION	Page 1/4
-----------------	---	-------------

TEMELÍN OPTION

EPC CONTRACT

CONTRACT SPECIFICATION

DOCUMENT NAME:	TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.1 INTRODUCTION
VERSION DATE:	March 2025

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.1 INTRODUCTION	Page 2/4
-----------------	---	-------------

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Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.1 INTRODUCTION	Page 3/4
-----------------	---	-------------

CONTENTS

CHAPTER 1.1 INTRODUCTION	4
--------------------------------	---

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.1 INTRODUCTION	Page 4/4
-----------------	---	-------------

CHAPTER 1.1 INTRODUCTION

The main objective of the Technical Requirements Document* is to set forth requirements for design of the Plant*. Volume 2 is dedicated to generic requirements applicable to the whole Plant* and specific requirements applicable to the Nuclear Island*. Volume 4 is dedicated to specific requirements applicable to Power Generation Plant*, Balance of Plant* and Support Facilities*. Volume 5 provides information on and requirements related to the Site* including connection points.

NOTE

For avoidance of doubt, any reference within Technical Requirements Document* to Section or Chapter without specification of related document shall be understood as a reference to Section or Chapter of the Technical Requirements Document*.

A

The design of the Plant* and the completed Plant* shall be in accordance with the requirements set in the Technical Requirements Document* taking into account specific aspects of the Site*.

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN	Page 1/7
-----------------	---	-------------

TEMELÍN OPTION

EPC CONTRACT

CONTRACT SPECIFICATION

DOCUMENT NAME:	TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN
VERSION DATE:	March 2025

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN	Page 2/7
-----------------	---	-------------

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Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN	Page 3/7
-----------------	---	-------------

CONTENTS

CHAPTER 1.2 PLANT DESIGN	4
1.2.A	4
1.2.B	5
1.2.C	5
1.2.D	5
1.2.E	5
1.2.F	6
1.2.G	6
1.2.H	6
1.2.I	7
1.2.J	7

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN	Page 4/7
-----------------	---	-------------

CHAPTER 1.2 PLANT DESIGN

1.2.A

The Plant* shall be a Light Water Reactor (LWR) nuclear power plant with a Pressurised Water Reactor (PWR) Nuclear Steam Supply System* (NSSS) with power output in the range specified in the Section 2.2.1 and with the capability to operate within the grid and in house load operation as required in Chapter 2.3.

AA

The Plant* design shall be optimised using value engineering procedures and processes taking into account total expenditures (TOTEX) as defined in Section 2.12.1.3.2.

AB

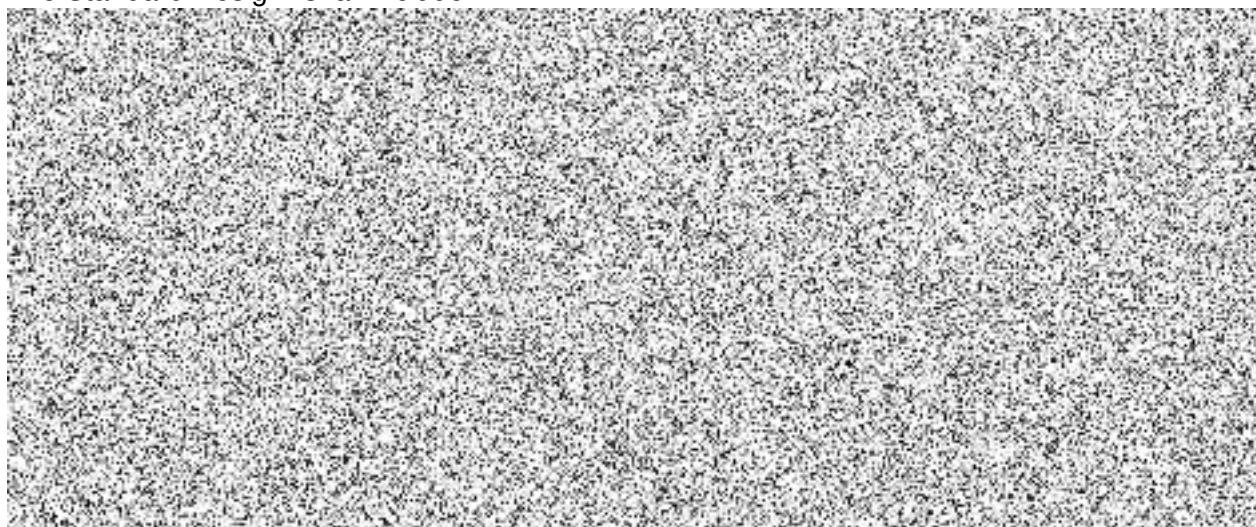
The Plant* design shall be based on the Standard design*.

AC

The Reference Plant* shall be based on the Standard Design* developed and managed in a controlled way by the Supplier*. The Standard Design* shall incorporate lessons learned from the projects.-

AD

The Standard Design* shall include:



AE

The Standard Design* shall be designed so that it can be licensed in a vast majority of world without significant changes and using the same safety case.

AF

The Supplier* shall aim at minimizing changes of the Plant* design with respect to the Standard design* design, unless such changes result from lessons learned in previous projects, or are necessary due to the established system of the Rules*, implementation to the Site* or are specifically requested by the Owner*.

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN	Page 5/7
-----------------	---	-------------

AG

The Supplier* shall justify all significant changes.

1.2.B

The design of the Plant* shall be such as to ensure that the safety and performance requirements set in the Technical Requirements Document*, the requirements of the Mandatory Law* and the Requirements of the Authorities*, as well as applicable Codes and Standards*, are all met, and that due account is taken of the Site* conditions, human capabilities and limitations and of factors that could influence human performance.

BA

The Plant* shall be designed and include provisions to ensure occupational health and safety as required by Rules*.

BB

For additional requirements see the Licensing and Permitting, Safety and Quality Document Section 2.2.

BC

The design of the Plant* shall be compliant with the EU taxonomy for sustainable activities within the scope of EPC contract.

1.2.C

The Plant* shall be designed using proven engineering practices and technologies and recognised Codes and Standards*.

CA

Sufficient margins shall be provided to guarantee that the safety and performance requirements set in the Technical Requirements Document* are achievable.

1.2.D

The design shall take due account of the results of deterministic safety analyses and probabilistic safety analyses, to ensure that due consideration is given to the prevention of accidents and to mitigation of the consequences of any accidents that do occur.

DA

The design shall ensure that the Plant* and Items Important to Safety* have the appropriate characteristics to ensure that Safety Functions* can be performed with the necessary reliability, that the Plant* can be operated safely within the operational limits and conditions for the full duration of its design life.

1.2.E

The design shall take due account of relevant available experience that has been gained in the design, construction and operation of other nuclear power plants, and of the results of relevant research programmes.

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN	Page 6/7
-----------------	---	-------------

EA

The Supplier* shall consider state-of-the-art technologies in terms of safety, performance and cost reduction.

EB

Due consideration for construction, Commissioning*, operation, testing, Inspection*, maintenance and Decommissioning* shall be taken in the design, starting from the earliest stages of the design process.

1.2.F

The Supplier* shall assess and implement, as far as possible, simplification in all areas of design, construction, operation and maintenance.

FA

However, this shall not be achieved at the expense of the safety, reliability, performance, Operability* and Maintainability* of the Plant*.

1.2.G

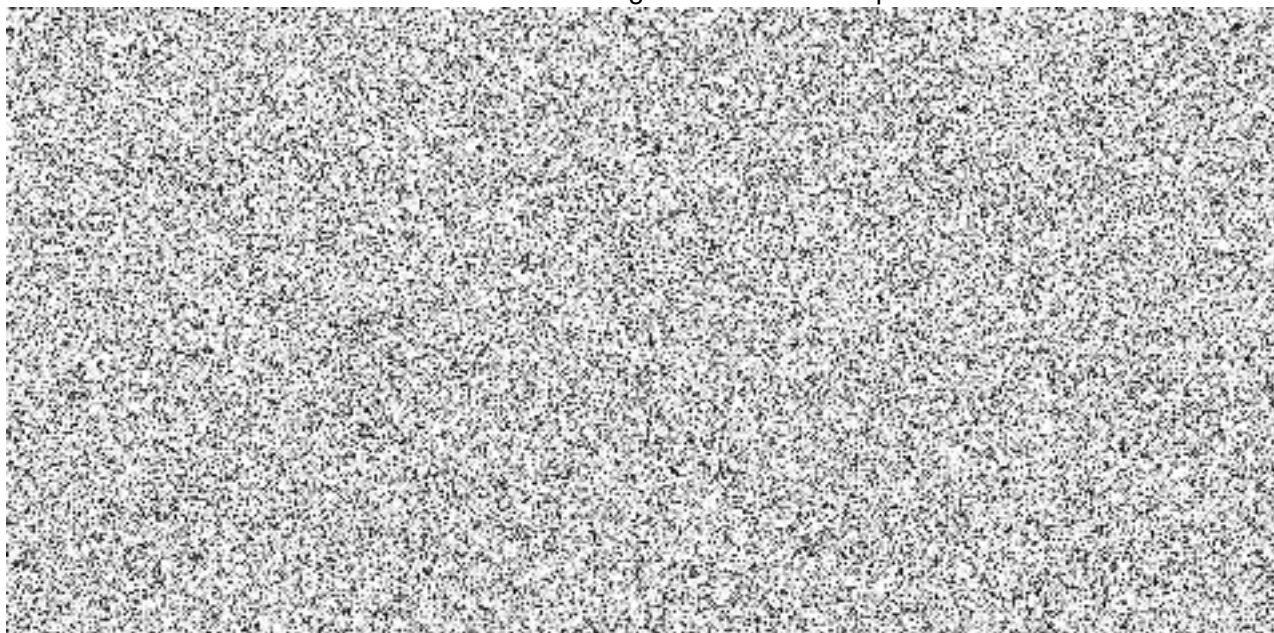
The philosophy of standardisation of design and equipment throughout the Plant* itself shall be promoted by the Supplier*.

1.2.H

The Plant* shall be designed to minimise the environmental impact of the Plant* construction, Commissioning*, operation, maintenance and Decommissioning*.

HA

These include but are not limited to the following environmental aspects:



Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.2 PLANT DESIGN	Page 7/7
-----------------	---	-------------

HB

The best available techniques shall be considered in design related to environmental protection.

HC

In particular, the Plant* design shall take into account the conditions and requirements set in the Environmental Impact Assessment* incl. inputs and outputs set in the Environmental Impact Assessment* (adjusted for 1 Unit*).

HCA

For environmental impact assessment and associated statement see Section 2.5.5.



HDA

Monitoring of groundwater level and groundwater quality batch sampling shall be performed from the drainage and monitoring wells during the Project construction.

Note:

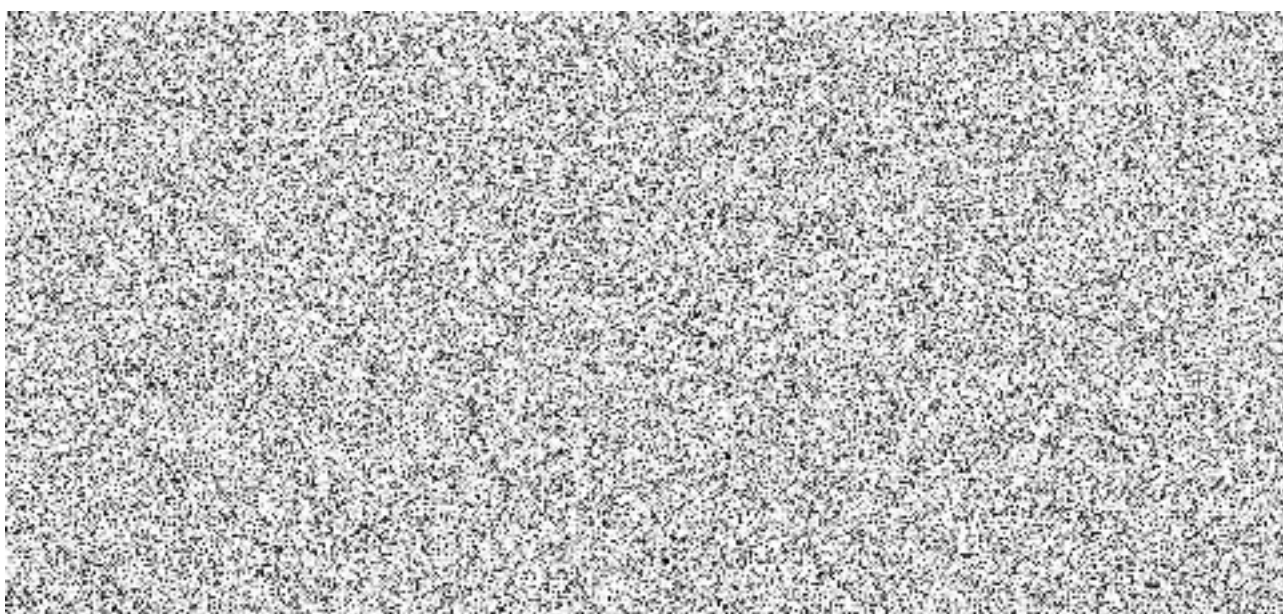
The requirement for monitoring of the Plant* impact on environment is part of the EIA binding conditions.

HE

For additional requirements see the Licensing and Permitting, Safety and Quality Document Section 2.7.

HF

The Supplier* shall provide monthly report on environmental impact of the Project*.



Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.3 DESIGN DOCUMENTATION	Page 1/4
-----------------	---	-------------

TEMELÍN OPTION

EPC CONTRACT

CONTRACT SPECIFICATION

DOCUMENT NAME:	TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.3 DESIGN DOCUMENTATION
VERSION DATE:	March 2025

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.3 DESIGN DOCUMENTATION	Page 2/4
-----------------	---	-------------

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Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.3 DESIGN DOCUMENTATION	Page 3/4
-----------------	---	-------------

CONTENTS

CHAPTER 1.3 DESIGN DOCUMENTATION	4
1.3.A	4
1.3.B	4
1.3.C	4

Dukovany 5&6	EPC CONTRACT – TERMS AND CONDITIONS APPENDIX O3 TEMELÍN OPTION EPC CONTRACT – CONTRACT SPECIFICATIONS TECHNICAL REQUIREMENTS DOCUMENT VOLUME 1 MAIN POLICIES AND OBJECTIVES CHAPTER 1.3 DESIGN DOCUMENTATION	Page 4/4
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CHAPTER 1.3 DESIGN DOCUMENTATION

1.3.A

The Supplier* shall duly provide all Documents* to the Owner* both directly and indirectly specified and/or indicated in the Rules* and/or in the EPC Contract*.

AA

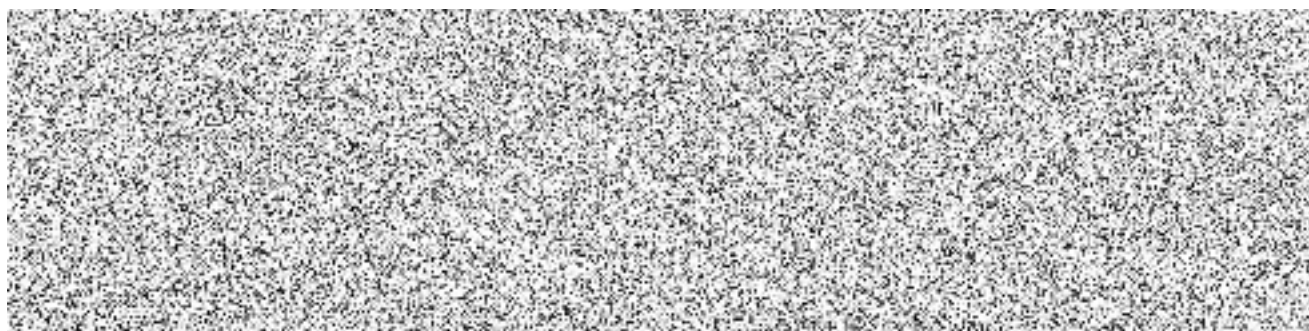
It shall be understood, that all Documents* indirectly indicated in the Rules* and/or in the EPC Contract* are also those Documents* which are not directly mentioned, referenced or named in the Rules* and/or in the EPC Contract*, but which are necessary for the Project* such as evidence for justification or demonstration of fulfilling or result of any requirement and/or recommendation of the Rules* and/or requirement of the EPC Contract* (typically those requiring or recommending some kind of information, justification, analysis, study, demonstration, documentation, evidence, verification, validation, etc.).

AB

As mentioned above, Documents* shall also include all relevant information required in EPC Contract* and Rules*.

AC

Documents* shall specifically include information required in Chapter 2.12 Attachment 1.



1.3.C

The design documentation of the Plant* shall be developed and provided to the Owner* in due time as specified in the Terms and Conditions* Article 4.1.1 with clear indication of compliance with the each of the requirements set in the Technical Requirements Document*.