

**Technical Information**

**Delay and Quantum Analysis and Advisory  
Service of  
Barakah Nuclear Power Plant (BNPP)**

*May, 2021*



## [APPENDIX A - SCOPE OF SERVICES AND METHOD OF PERFORMANCE]

### 1 Introduction

- 1.1 Korea Electric Power Corporation (“**KEPCO**”) was awarded a bid in December 2009 to build the first nuclear power plant in the UAE. KEPCO entered into a contract with Emirates Nuclear Energy Corporation (“**ENEC**” or “**Owner**”) to build four APR-1400 nuclear reactors (each a “**Unit**”, and collectively, “**Units**”) at Barakah, with an electrical output of 1,400MW each (“**Prime Contract**”). The Barakah Nuclear Power Plant (“**BNPP**”) is located in the Al Dhafra Region of the Emirate of Abu Dhabi, approximately 53 km west-southwest of the city of Ruwais. Pursuant to the Prime Contract, KEPCO provides design, engineering, procurement, commissioning, licensing, maintenance and construction (EPC) work for the construction of the four Units.
- 1.2 KEPCO Engineering & Construction Company (“**KEPCO E&C**”) is an affiliate of KEPCO, and entered into an architect engineering contract with KEPCO to provide services in design, engineering, licensing support, inspection, testing, and start-up of the Units at BNPP (“**A&E Contract**”). KEPCO E&C’s scope of work under the A&E Contract includes control of the project schedules and supporting KEPCO’s project management in accordance with the project schedules.
- 1.3 Since 2018, KEPCO has been discussing with ENEC concerning the need for an extension of time with regard to the date of substantial completion for Units 1 to 4, from November 2016 to April 2021 (“**EOT Request**”). It is KEPCO’s position that the Owner’s failure to obtain the required Operation License caused the delay in a key milestone that must be achieved prior to substantial completion, which in turn caused the delay to the overall BNPP project. In response, ENEC has requested KEPCO to provide a delay analysis based on an internationally recognized methodology to support the EOT Request, providing details of the delay events which impacted the critical path schedule. In addition to the EOT Request, KEPCO is also considering claiming for related prolongation costs against ENEC (“**Prolongation Cost Claim**”). The EOT Request and Prolongation Cost Claim shall collectively be referred to as “**ENEC Claims**”.
- 1.4 Furthermore, KEPCO is also expecting to hold separate discussions with certain major subcontractors engaged on the BNPP Project whose work scopes are related to the EOT Request and potential Prolongation Cost Claim (“**Major Subcontractors**”), in order to assess whether any delays to the project and/or related prolongation costs are attributable to any Major Subcontractor(s). Such potential attribution of delays and/or prolongation costs to Major Subcontractors shall be referred to, respectively, as “**Subcontractor Delay Liability**” and “**Subcontractor Cost Liability**” and collectively, as “**Subcontractor Liability Issues**”. Major Subcontractors who may be relevant for purposes of the EOT Request and potential Prolongation Cost Claim are Hyundai Engineering & Construction Co., Limited,

Samsung C&T Corporation, Doosan Heavy Industries & Construction, Korea Hydro & Nuclear Power Co., Ltd., KEPCO E&C, Target Rock, Toshiba, Wonil T&I, Jungwoo Industrial Machine, HHI-TMC, and TSM-Tech.

- 1.5 KEPCO E&C, as KEPCO's architect engineering subcontractor for the BNPP project who is also responsible for managing the project schedules of the BNPP Project on KEPCO's behalf, is providing support for KEPCO's discussions with ENEC and/or Major Subcontractors on the foregoing matters.

## 2 Scope of Work

- 2.1 Under the contract with KEPCO E&C (the "**Contract**"), the contractor (the "**Contractor**") shall provide delay and/or quantum analysis and technical consulting services including the tasks described in this Section [2].
- 2.2 With respect to delay-related work, the Contractor shall provide, *inter alia*, the following services:
  - 2.2.1 Closely communicate with KEPCO to understand the factual background and delay events related to KEPCO's ENEC Claims and Subcontractor Liability Issues.
  - 2.2.2 Perform delay analysis in connection with KEPCO's ENEC Claims, on an independent and impartial basis, in accordance with an internationally recognized method, such as the "Windows Analysis" method.
  - 2.2.3 Assist KEPCO in related negotiations with ENEC, ENEC's subsidiaries and/or Major Subcontractors, including preparing documentation related to the Contractor's delay analysis.
  - 2.2.4 Provide technical advisory services in connection with KEPCO's ENEC Claims and KEPCO's Subcontractor Liability Issues, as may be requested by KEPCO, including but not limited to (i) reviewing and/or assisting in the preparation of claim documents and/or correspondences to be provided to the relevant parties, and (ii) providing responses to KEPCO's questions in relation to relevant findings made the Contractor's delay analysis.
  - 2.2.5 Closely communicate with members of the Contractor's team conducting quantum-related work (described in Section [2.3] below) as necessary to assist in necessary quantum analysis, and/or as may be reasonably requested by KEPCO, including by performing further delay analysis in connection with the Subcontractor Delay Liability.
- 2.3 With respect to quantum-related work concerning the Contract, the **Contractor** shall provide, *inter alia*, the following services:
  - 2.3.1 Closely communicate with KEPCO to understand the factual background,

delay events, and costs incurred related to the delay of the BNPP project including but not limited to KEPCO's Prolongation Cost Claim and Subcontractor Cost Liability.

- 2.3.2 Perform quantum analysis in connection with the delay of the BNPP project including but not limited to KEPCO's Prolongation Cost Claim and Subcontractor Cost Liability, on an independent and impartial basis, in accordance with an internationally recognized method.
- 2.3.3 Assist KEPCO in related negotiations with ENEC, ENEC's subsidiaries and/or Major Subcontractors (including KEPCO E&C), including by: (a) preparing documentation related to the Contractor's quantum analysis; (b) assisting in preparing letters to the Major Subcontractors; (c) reviewing and examining any information submitted by the Major Subcontractors to support its prolongation cost claim against KEPCO.
- 2.3.4 Provide technical advisory services, as may be requested by KEPCO, in connection with: (a) KEPCO's claim to ENEC for costs incurred related to the delay of the BNPP project including but not limited to KEPCO's Prolongation Cost Claim; and (b) KEPCO's discussion with Major Subcontractors relating to costs incurred related to the delay of the BNPP project including but not limited to Subcontractor Cost Liability. This will include but not be limited to (i) reviewing and/or assisting in the preparation of claim documents and/or correspondences to be provided to the relevant parties, and (ii) providing responses to KEPCO's questions in relation to relevant findings made during the delay Contractor's quantum analysis.
- 2.3.5 Closely communicate with members of the Contractor's team conducting delay-related work (described in Section 2.2 above) as necessary for the quantum analysis, and/or as may be reasonably requested by KEPCO.

### 3 Duration and Deliverables

- 3.1 The duration of the Contract will begin on the execution date (the "**Execution Date**") and end fifteen (15) months after the Execution Date. Thereafter, in the event KEPCO's discussions regarding KEPCO's ENEC Claims and Subcontractor Liability Issues have not been resolved by then, KEPCO E&C shall be entitled to request for, and the Contractor shall agree to, a one (1) year extension of the Contract. Such resolution of KEPCO's discussions regarding KEPCO's ENEC Claims and Subcontractor Liability Issues shall be determined at KEPCO's discretion. For the avoidance of doubt, the extension of the Contract shall not affect the Fee Cap or rate(s) applicable to the Contract in any way.
- 3.2 For the avoidance of doubt, while KEPCO E&C shall be the party to the Contract, the Contractor shall be instructed by KEPCO (and KEPCO's instructions will

override any conflicting instructions by KEPCO E&C) with respect to the deliverables set forth in this Section [3].

3.3 The Contractor shall produce the following deliverables to KEPCO, within the timelines provided below.

3.3.1 Primary delay-related deliverable: One (1) critical delay analysis report with regard to KEPCO's EOT Request, addressing delays attributable to ENEC and in accordance with an internationally recognized methodology, within three (3) months after the Execution Date (the "**EOT Analysis**").

3.3.2 Quantum-related deliverable: In the event instructed in writing by KEPCO after the submission of the EOT Analysis, (a) One (1) quantum analysis report with regard to the delay of the BNPP project including but not limited to KEPCO's Prolongation Cost Claim, concerning delays attributable to ENEC and in accordance with an internationally recognized methodology, within [fifty (50) days] after KEPCO's written instruction (the "**Prolongation Cost Claim Analysis**"); and in the event instructed in writing by KEPCO after the submission of the Prolongation Cost Claim Analysis, (b) One (1) quantum analysis report with regard to KEPCO's Subcontractor Cost Liability, concerning delays attributable to Major Subcontractors and in accordance with an internationally recognized methodology, within [thirty (30) days] after KEPCO's written instruction, which will be separately provided from KEPCO's instruction concerning the Prolongation Cost Claim Analysis (the "**Subcontractor Cost Liability Analysis**").

3.3.3 Secondary delay-related deliverable: In the event instructed in writing by KEPCO in relation to the preparation of the Subcontractor Cost Liability Analysis after the submission of the Prolongation Cost Claim Analysis, one (1) critical delay analysis report with regard to the Subcontractor Delay Liability and in accordance with an internationally recognized methodology, within [thirty (30) days] after KEPCO's written instruction ("**Subcontractor Delay Liability Analysis**").

#### 4 Others

- 4.1 The Delay Lead, who is the one member of Contractor's team who shall lead the delay-related work for the Contract, the Quantum Lead, who is the one member of Contractor's team who shall lead the quantum-related work for the Contract, and senior members of the Contractor's Project Teams for delay and quantum shall remain the same as proposed in the Contractor's Bid Proposal during the term of the Contract, and may only be replaced upon obtaining KEPCO's prior written consent.
- 4.2 For the avoidance of doubt, KEPCO shall not be considered a third party in connection with any confidentiality obligations related to the Contract or stipulated

in any non-disclosure agreements executed in connection with the Contract.

- 4.3 Within thirty (30) days of the completion or termination of the Contract, the Contractor shall destroy all Confidential Materials, which consist of all information, communication and documentation received by, communicated to or created by the Contractor in relation to the services to be provided under the Contract.