|  |
| --- |
| **طرح نگهداشت و افزایش تولید 27 مخزن** |
| **DUTY SPECIFICATION FOR CHEMICAL INJECTION PACKAGE** **نگهداشت و افزایش تولید میدان نفتی بینک** |
| D04 | NOV.2023 | AFD | M.Aryafar | M.Fakharian | S.Faramarzpour |  |
| D03 | FEB.2023 | IFA | M.Aryafar | M.Fakharian | M.Mehrshad |  |
| D02 | NOV.2022 | IFA | M.Aryafar | M.Fakharian | M.Mehrshad |  |
| D01 | AUG.2022 | IFA | M.Aryafar | M.Fakharian | M.Mehrshad |  |
| D00 | MAR.2022 | IFC | M.Aryafar | M.Fakharian | M.Mehrshad |  |
| **Rev.** | **Date** | **Purpose of Issue/Status** | **Prepared by:** | **Checked by:** | **Approved by:** | **CLIENT Approval** |
| **Class:** 2 | **CLIENT Doc. Number:** F0Z-708738 |
| **Status:** | **IDC: Inter-Discipline Check****IFC: Issued For Comment** **IFA: Issued For Approval****AFD: Approved For Design** **AFC: Approved For Construction** **AFP: Approved For Purchase****AFQ:** Approved For Quotation **IFI: Issued For Information****AB-R: As-Built for CLIENT Review** **AB-A: As-Built –Approved** |

**REVISION RECORD SHEET**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PAGE** | **D00** | **D01** | **D02** | **D03** | **D04** |  | **PAGE** | **D00** | **D01** | **D02** | **D03** | **D04** |
| **1** | X | X | X | X | X | **66** |  |  |  |  |  |
| **2** | X | X | X | X | X | **67** |  |  |  |  |  |
| **3** | X |  |  |  |  | **68** |  |  |  |  |  |
| **4** | X |  |  |  |  | **69** |  |  |  |  |  |
| **5** | X |  |  |  |  | **70** |  |  |  |  |  |
| **6** | X | X |  | X | X | **71** |  |  |  |  |  |
| **7** | X |  | X | X | X | **72** |  |  |  |  |  |
| **8** | X | X | X |  | X | **73** |  |  |  |  |  |
| **9** | X |  |  |  |  | **74** |  |  |  |  |  |
| **10** |  |  |  |  |  | **75** |  |  |  |  |  |
| **11** |  |  |  |  |  | **76** |  |  |  |  |  |
| **12** |  |  |  |  |  | **77** |  |  |  |  |  |
| **13** |  |  |  |  |  | **78** |  |  |  |  |  |
| **14** |  |  |  |  |  | **79** |  |  |  |  |  |
| **15** |  |  |  |  |  | **80** |  |  |  |  |  |
| **16** |  |  |  |  |  | **81** |  |  |  |  |  |
| **17** |  |  |  |  |  | **82** |  |  |  |  |  |
| **18** |  |  |  |  |  | **83** |  |  |  |  |  |
| **19** |  |  |  |  |  | **84** |  |  |  |  |  |
| **20** |  |  |  |  |  | **85** |  |  |  |  |  |
| **21** |  |  |  |  |  | **86** |  |  |  |  |  |
| **22** |  |  |  |  |  | **87** |  |  |  |  |  |
| **23** |  |  |  |  |  | **88** |  |  |  |  |  |
| **24** |  |  |  |  |  | **89** |  |  |  |  |  |
| **25** |  |  |  |  |  | **90** |  |  |  |  |  |
| **26** |  |  |  |  |  | **91** |  |  |  |  |  |
| **27** |  |  |  |  |  | **92** |  |  |  |  |  |
| **28** |  |  |  |  |  | **93** |  |  |  |  |  |
| **29** |  |  |  |  |  | **94** |  |  |  |  |  |
| **30** |  |  |  |  |  | **95** |  |  |  |  |  |
| **31** |  |  |  |  |  | **96** |  |  |  |  |  |
| **32** |  |  |  |  |  | **97** |  |  |  |  |  |
| **33** |  |  |  |  |  | **98** |  |  |  |  |  |
| **34** |  |  |  |  |  | **99** |  |  |  |  |  |
| **35** |  |  |  |  |  | **100** |  |  |  |  |  |
| **36** |  |  |  |  |  | **101** |  |  |  |  |  |
| **37** |  |  |  |  |  | **102** |  |  |  |  |  |
| **38** |  |  |  |  |  | **103** |  |  |  |  |  |
| **39** |  |  |  |  |  | **104** |  |  |  |  |  |
| **40** |  |  |  |  |  | **105** |  |  |  |  |  |
| **41** |  |  |  |  |  | **106** |  |  |  |  |  |
| **42** |  |  |  |  |  | **107** |  |  |  |  |  |
| **43** |  |  |  |  |  | **108** |  |  |  |  |  |
| **44** |  |  |  |  |  | **109** |  |  |  |  |  |
| **45** |  |  |  |  |  | **110** |  |  |  |  |  |
| **46** |  |  |  |  |  | **111** |  |  |  |  |  |
| **47** |  |  |  |  |  | **112** |  |  |  |  |  |
| **48** |  |  |  |  |  | **113** |  |  |  |  |  |
| **49** |  |  |  |  |  | **114** |  |  |  |  |  |
| **50** |  |  |  |  |  | **115** |  |  |  |  |  |
| **51** |  |  |  |  |  | **116** |  |  |  |  |  |
| **52** |  |  |  |  |  | **117** |  |  |  |  |  |
| **53** |  |  |  |  |  | **118** |  |  |  |  |  |
| **54** |  |  |  |  |  | **119** |  |  |  |  |  |
| **55** |  |  |  |  |  | **120** |  |  |  |  |  |
| **56** |  |  |  |  |  | **121** |  |  |  |  |  |
| **57** |  |  |  |  |  | **122** |  |  |  |  |  |
| **58** |  |  |  |  |  | **123** |  |  |  |  |  |
| **59** |  |  |  |  |  | **124** |  |  |  |  |  |
| **60** |  |  |  |  |  | **125** |  |  |  |  |  |
| **61** |  |  |  |  |  | **126** |  |  |  |  |  |
| **62** |  |  |  |  |  | **127** |  |  |  |  |  |
| **63** |  |  |  |  |  | **128** |  |  |  |  |  |
| **64** |  |  |  |  |  | **129** |  |  |  |  |  |
| **65** |  |  |  |  |  | **130** |  |  |  |  |  |

**CONTENTS**

[1.0 INTRODUCTION 4](#_Toc150761513)

[2.0 Scope 5](#_Toc150761514)

[3.0 NORMATIVE REFERENCES 5](#_Toc150761515)

[3.1 Local Codes and Standards 5](#_Toc150761516)

[3.2 The Project Documents 5](#_Toc150761517)

[3.3 ENVIRONMENTAL DATA 5](#_Toc150761518)

[3.4 Order of Precedence 5](#_Toc150761519)

[4.0 Corrosion inhibitor injection package 6](#_Toc150761520)

[4.1 Package description and requirements 6](#_Toc150761521)

[4.2 process description 6](#_Toc150761522)

[4.3 vendor scope 6](#_Toc150761523)

[4.4 Solvent specification 7](#_Toc150761524)

[4.5 Pumps specification 7](#_Toc150761525)

[4.6 Tank specification 7](#_Toc150761526)

[4.7 Package Instrument & Control System 8](#_Toc150761527)

[5.0 Methanol Injection package 8](#_Toc150761528)

1. **INTRODUCTION**

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

As a part of the Project, a New Gas Compressor Station (adjacent to existing Binak GCS) shall be constructed to gather of 15 MMSCFD (approx.) associated gases and compress & transfer them to Siahmakan GIS.

**GENERAL DEFINITION**

The following terms shall be used in this document.

|  |  |
| --- | --- |
| CLIENT:  | National Iranian South Oilfields Company (NISOC)  |
| PROJECT: | Binak Oilfield Development – Surface Facilities; New Gas Compressor Station |
| EPD/EPC CONTRACTOR (GC): | Petro Iran Development Company (PEDCO) |
| EPC CONTRACTOR: | Joint Venture of : Hirgan Energy – Design & Inspection (D&I) Companies |
| VENDOR: | The firm or person who will fabricate the equipment or material. |
| EXECUTOR:  | Executor is the party which carries out all or part of construction and/or commissioning for the project. |
| THIRD PARTY INSPECTOR (TPI): | The firm appointed by EPD/EPC CONTRACTOR (GC) and approved by CLIENT (in writing) for the inspection of goods. |
| SHALL: | Is used where a provision is mandatory. |
| SHOULD: | Is used where a provision is advisory only. |
| WILL:  | Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR. |
| MAY:  | Is used where a provision is completely discretionary. |

1. **Scope**

This specification outlines the minimum process requirements for design of Associated Chemical Injection packages in Binak Plant.

1. **NORMATIVE REFERENCES**

## Local Codes and Standards

|  |  |
| --- | --- |
| * IPS-E-PR-492
 | Process Requirements Of Caustic And Chemical Systems |

## The Project Documents

|  |  |
| --- | --- |
| * BK-GNRAL-PEDCO-000-PR-DC-0001
 | Process Design Criteria |
| * BK-GNRAL-PEDCO-000-PR-DB-0001
 | Process Basis Of Design |
| * BK-GCS-PEDCO-120-PR-PF-0002
 | PFD |
| * BK-GCS-PEDCO-120-PR-UF-0001
 | UFD |
| * BK-GCS-PEDCO-120-PR-PI-0018
 | P&IDs |

## ENVIRONMENTAL DATA

Refer to "Process Basis of Design; Doc. No. BK-GNRAL-PEDCO-000-PR-DB-0001".

## Order of Precedence

In case of any conflict between the contents of this document or any discrepancy between this document and other project documents or reference standards, this issue must be reported to the CLIENT. The final decision in this situation will be made by CLIENT.

1. **Corrosion inhibitor injection package**

D04

## Package description and requirements

VENDOR shall include all necessary equipment as described below to make a complete and operable unit. The minimum necessary equipment is shown in P&ID No. BK-GCS-PEDCO-120-PR-PI-0018 .This shall include but not be limited to the following:

* One storage tank with mixer
* Four injection pumps
* Piping and all instrumentation required for safe operation
* Filters
* Pulsation dampeners
* Calibration pots
* Skid
* Package Piping with supports
* Vents and drains
* Dampener charge kits (one / skid)
* Internals and accessories
* Drip pan for skids
* Necessary platforms, ladders, handrails and davits
* Package Instrumentation & cabling to junction boxes
* Cable trays and support
* Local control panel
* Package Electricals

## process description

The package will provide corrosion inhibitor to injection points.

Corrosion inhibitor will be stored in tank. The capacity of tank is estimated for 7 days storage of maximum corrosion inhibitor consumption rate.

Injection is ensured by metering pumps, which will be stopped bay tank low low liquid level.

## vendor scope

The vendor shall provide a skid mounted injection package with all associated interconnecting pipe work and instrumentation to operate the package safely and efficiently.

The design and performance of storage tank and pumping facilities shall comply with all requirements.

## Solvent specification

Gasoil could be used as solvent for corrosion inhibitor, with following specification:

* Specific gravity 15/15°C = 082 ~ 0.86 (Gasoil Solvent)
* Viscosity, Cst at 38°C = 2 ~ 5.5 (Gasoil as Solvent)

## Pumps specification

The inhibitor injection pumps are 2 types of pump; One set for High Pressure consumers and One set for Low Pressure consumers with following specifications:

**4.6.1 High Pressure** (**P-2207A/B)**

* Quantity: 2 (1+1)
* Rated capacity: 1.11 lit/hr lit/hr
* Type: P.D-Controlled Volume/Metering (Acc. to API 675 Std. & IPS-M-PM-150)
* Discharge pressure: 62 barg
* Design temperature: 55°C

**4.6.2 Low Pressure** (**P-2207C/D)**

* Quantity: 2 (1+1)
* Rated capacity: 1.56 lit/hr
* Type: P.D-Controlled Volume/Metering (Acc. to API 675 Std. & IPS-M-PM-150)
* Discharge pressure: 9 barg
* Design temperature: 55°C

## Tank specification

**4.6.1 Operating condition**

* Pressure: Atmospheric
* Temperature: Ambient

**4.6.2 Design condition**

* Pressure: Atm. + Full of Water
* Temperature: 55°C

**4.6.3 Tank Sizing (Vertical):**

* Tank Working Capacity : 0.4 m3
* Tank Nominal Capacity : 1.0 m3

## Package Instrument & Control System

Package control system is “Package type A” (Refer to Project Specifications for Instrumentation of Package Units Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0004.

The package is equipped with its instruments and controlled by its attached local panel ( LCP). shall be connected to the PCS, ESD, for required monitoring, control functions and shutdowns as per P&ID.

400/230 VAC Power supply will be submitted by Contractor. Any convertor, battery backup, stabilizer, distributed system,… shall be provided by package vendor.

For instrumentation and cabling refer to Specification for Instrumentation, Doc.No.BK-GNRAL-PEDCO-000-IN-SP-0001, Specification For Instrument/F&G Cables, Doc.No.BK-GNRAL-PEDCO-000-IN-SP-0010, Instrument & Control Design Criteria, Doc.No.BK-GCS-PEDCO-120-IN-DC-0002.

1. **Methanol Injection package**

The required methanol is supplied from the existing plant.