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| **طرح نگهداشت و افزایش تولید 27 مخزن** | | | | | | |
| **INSPECTION & TEST PLAN (ITP)**  **نگهداشت و افزایش تولید میدان نفتی بینک** | | | | | | |
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| V01 | Oct 2023 | AFC | VISTA Co. | M.Fakharian | S.Faramarzpour |  |
| V00 | July 2023 | IFA | VISTA Co. | M.Fakharian | A.M.Mohseni |  |
| **Rev.** | **Date** | **Purpose of Issue/Status** | **Prepared by:** | **Checked by:** | **Approved by:** | **CLIENT Approval** |
|  | |  | | | | |
| **Status:** | **IFA: Issued for Approval**  **IFR: Issued for Review**  **IFI: Issued for Information**  **AFC: Approved for Construction** | | | | | |

**REVISION RECORD SHEET**

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| **PAGE** | **V00** | **V01** | **V02** | **V03** | **V04** |  | **PAGE** | **V00** | **V01** | **V02** | **V03** | **V04** |
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| **2** | X | X |  |  |  | **52** |  |  |  |  |  |
| **3** | X | X |  |  |  | **53** |  |  |  |  |  |
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# 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.

**GENERAL DEFINITION**

V01

The following terms shall be used in this document.

|  |  |
| --- | --- |
| CLIENT: | National Iranian South Oilfields Company (**NISOC**) |
| PROJECT: | Binak Oilfield Development – Manufacturing (w/Engineering & Material Supply) of Pig traps |
| EPD/EPC CONTRACTOR (GC): | Petro Iran Development Company (**PEDCO**) |
| EPC CONTRACTOR/PURCAHSER: | Joint Venture of: **HIRGAN** Energy – Design & Inspection(D&I) Companies |
| VENDOR: | Nam Avaran Beh Koosh **VISTA** |
| EXECUTOR: | Executor is the party which carries out all or part of construction and/or commissioning for the project. |
| **TPI**: | Third Party Inspector |
| 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. |
| HOLD POINT:  (abbreviated: H) | Means that a hold shall be applied to the production schedule. TheClient must be invited for the inspection / test and the inspection / test must be carried out with the named person in attendance.  For drawings / documents: Vendor must receive approved drawings / documents, stamped by /Client. |

|  |  |
| --- | --- |
| Review  (abbreviated R) | Means that documents shall be submitted after inspection for review as part of the Vendor data book. |
| Review & Approve  (abbreviated: R/A) | Means that documents shall be submitted after inspection for review & be approved as part of the Vendor data book. |
| Witness  (abbreviated: W) | Means that the TPI/Client requires notification of the inspection timing. However, if the Client is not present, Vendor will carry out the test and proceed with the work. |
| Spot Witness  (abbreviated: S.W) | Means random Inspection during visits. |
| Monitoring  (abbreviated: M)  MOM | Means that the Client requires monitoring during the Manufacturing of goods. However, if the work is performed as scheduled and if the Client is not present, Vendor will proceed with the work.  Minutes of meeting |
| PIM | Pre-Inspection Meeting |

# 

# SCOPE

This document covers minimum necessary requirements for the inspect and control the quality of the 2 sets of Pig Launcher and Receiver Trap & final inspection to satisfy the quality of theexecution process in accordance with the standard and Project Specification, And the use of the above document in the development project of Binak oil field.

V01

# NORMATIVE REFERENCES

## Local Codes and Standards

|  |  |
| --- | --- |
| * IPS-M-PI-130 (1) | Material and Equipment Standard for Pig Launching and Receiving Traps |
| * IPS-G-ME-150 (1) | Iranian Petroleum Standard – General Standard For Towers, Reactors, Pressure vessels & Internals |
| * S4L-6516 (REV. B) | National Iranian Oil Company – Standard Drawing for Pipeline Pig Traps (for Intelligent Pig) |
| * IPS-E-IN-100 (2) | Iranian Petroleum Standard – Engineering Standard for General Instrumentation |
| * IPS-E-TP-740 (1) | Iranian Petroleum Standard – Engineering Standard for Corrosion Considerations in Material Selection |
| * IPS-G-GN-210 | General standard for packing and packaging |
| * IPS-E-TP-100 (1) | Engineering Standards for Paints |
| * IPS-C-TP-102 (1) | Construction Standard for Painting |

## International Codes and Standards

* ASME Sec. VIII, div. 1 (2019)
* ASME B 31.4 (2022)
* IPS-M-PI-130 (2002)
* ASME Sec. V (2021)
* ASTM (46th Edition)
* ASME Sec. II (2019)
* NACE MR 0175/ISO 15156 (2021)
* ISO 8501 (2020)

## The Project Documents

|  |  |
| --- | --- |
| * BK-PPL-PEDCO-320-ME-MR-0001-D00 | PMR FOR PIG TRAPS |
| * BK-GNRAL-PEDCO-000-ME-DC-0001-D00 | Mechanical Design Criteria |
| * BK-PPL-PEDCO-320-ME-SP-0001-D02 | Spec. for Pig Launching / Receiving Traps |
| * BK-PPL-PEDCO-320-ME-DT-0001-D00 | Data Sheets For Pig Traps |
| * BK-GNRAL-PEDCO-000-QC-PR-0015-D00 | Specification for Welding Procedure |
| * BK-GNRAL-PEDCO-000-QC-PR-0045-D00 | Packing, Marking, Transportation Procedure |
| * ICE-EID-MI-SP01-Rev.01 | دستورالعمل بازرسی، خرید و ساخت کالا |
| * E&C-QC-SP-1-D01 | دستورالعمل تامین قطعات یدکی راه اندازی وراهبری دو سالانه |
| * BK-GNRAL-PEDCO-000-PI-SP-0011-D00 | Specification of welding of plant piping system & NDT |
| * BK-GNRAL-PEDCO-000-PI-SP-0008-D00 | Specification for Material Requirements in Sour service |
| * BK-PPL-PEDCO-120-PI-SP-0001-D00 | Piping Material Specification (PMS) |
| * BK-GNRAL-PEDCO-000-PI-SP-0005-D02 | Specification for Fittings, Flanges, Gaskets and Bolts |
| * BK-GNRAL-PEDCO-000-PI-SP-0006-D04 | Specification for Painting |
| * BK-GNRAL-PEDCO-000-PI-SP-0001-D00 | Specification for color coding and marking |
| * BK-GNRAL-PEDCO-000-PI-SP-0017-D02 | Specification for Cleaning and Flushing |
| * BK-GNRAL-PEDCO-000-PL-SP-0015-D01 | Specification for Pig |
| * BK-GNRAL-PEDCO-000-ME-DW-0002-D00 | Standard Detail Drawing for Pressure Vessel |

## 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. ITP FOR PIG TRAP

V01

| **No.** | **Description of Inspection and Test** | **Refrence Code/Standard / Specification** | **Acceptance Criteria** | **Confirmation documents** | **Inspection Authority** | | | | | **Report** | **Remark** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VISTA** | **TPI** | **HIRGAN** | **PEDCO** | **NISOC** |
| **Before Fabrication** | | | | | | | | | | | |
| A1 | PIM | Project Document | --- | MOM | H | H | H | H | H | 🗶 | --- |
| A2 | Technical document and General drawing/Design | Project Document | Project Spec / Procedure | --- | H | --- | RA | RA | Note1 | --- | --- |
| **Raw Material Inspection** | | | | | | | | | | | |
| B1 | Mill Test Certificate & Origin | MR / PMR / Project Spec / Data sheet | According to PMR & Project Spec & Standard | Mill Certificate EN 10204 3.1 | H | RA | RA | RA | RD | ✓ | Note3 |
| B2 | Material sampling & Lab test (if required) | MR / PMR / Project Spec / Data sheet | According to PMR & Project Spec & Standard | Lab Report | H | H | RD | RD | RD | ✓ | Summery Material |
| B3 | Dimension check and visual inspection | Data sheet & DWGs | DWGs & Data Sheet & MR | Inspection Report | H | H | RD | RD | RD | ✓ | --- |
| B4 | Consumable material inspection | MR / PMR / Project Spec / Data sheet | ASME BPVC Sec.II Part A & C / Standard | Certifications | H | RA | RD | RD | RD | ✓ | --- |
| **Welding Document** | | | | | | | | | | | |
| C1 | WPS & PQR | Project Spec / Procedure / MR | ASME Sec. IX & Reference STDs | WPS & PQR | H | RA | RD | RD | RD | ✓ | --- |
| C2 | Welder qualification test | Project Spec / Procedure / MR | ASME Sec. IX | Welder Certificate | H | RA | RD | RD | RD | ✓ | Certificate |
| C3 | NDT operator certificate (Level II) | Project Spec / Procedure | ASME BPVC Sec.V & ASNT SNT-TC--1A | NDT Certificate | H | RD | RD | RD | RD | ✓ | Certificate |
| **During Fabrication** | | | | | | | | | | | |
| D1 | Cutting & beveling | As per DWG | DWG | QC Report | H | SW | RD | RD | RD | ✓ | --- |
| D2 | Fit up C.W. L | DWG | DWG | QC Report | H | SW | RD | RD | RD | ✓ | --- |
| D3 | Marking & operating of nozzle location | DWG | DWG | QC Report | H | SW | RD | RD | RD | ✓ | --- |
| D4 | Dimensional & visual check (fit up) | DWG | DWG | QC Report | H | SW | RD | RD | RD | ✓ | --- |
| D5 | Welding | WPS & PQR | WPS & PQR | QC Report | H | SW | RD | RD | RD | ✓ | --- |
| D6 | Dimensional & visual check | DWG | DWG | QC Report | H | W | RD | RD | RD | ✓ | --- |
| D7 | NDT beofor PWHT  (100% VT & RT) | Project Spec/MR | NDT Procedure | NDT Report | H | W | RD | RD | RD | ✓ | --- |
| D8 | PWHT | Project Spec / Procedure according NACE MR 0175/ ISO 15156 | Heat Treatment (PWHT) Procedure | PWHT Report & Graph | H | W | W | W | W | ✓ | --- |
| D9 | Hardness test | Project Spec / Procedure according NACE MR 0175/ ISO 15156 | According NACE MR 0175 / ISO 15156 | Hardness Report | H | SW | RD | RD | RD | ✓ | Report |
| D10 | NDT after PWHT  (100% VT & PT or MT) | Project Spec/MR | NDT Procedure | NDT Report | H | W | RD | RD | RD | ✓ | --- |
| D11 | Final visual dimensional check | Approved DWG | Approved DWG | DT, VT report | H | H | RD | RD | RD | ✓ | --- |
| D12 | Hydrostatic test | Project Spec / Hydrostatic Procedure according ASME BPVC Sec.VIII Div1 | Hydrostatic Procedure according ASME BPVC Sec.VIII Div1 | QC report & Calibration Certificate | H | H | H | H | H | ✓ | Report |
| D13 | Closure functional test | Project Spec/MR | Closure functional test Procedure | QC Report / TPI Report | H | H | H | H | H | ✓ | --- |
| D14 | Check of surface preparation | Project Spec / MR / IPS-E-TP-100 & IPS-C-TP-102 | Paint Procedure | QC Report / TPI Report | H | W | RD | RD | RD | ✓ | --- |
| D15 | Painting (Visual inspection of each layer, Ral check) | Project Spec / Paint Procedure | Paint Procedure | QC Paint Report / TPI Report | H | W | RD | RD | RD | ✓ | Report (Note2) |
| **After Fabrication** | | | | | | | | | | | |
| E1 | Name Plate Check | Project Spec & drawing/Design | Project Spec & drawing/Design/ Name Plate Drawing Document | QC Report / TPI Report | H | H | RD | RD | RD | 🗶 | --- |
| E2 | Packing visual inspection | Project Spec / Packing Procedure | Packing Procedure | QC Report / TPI Report & Packing | H | H | RD | RD | RD | ✓ | --- |
| E3 | Final Inspection and Inspection Release note (IRN) | Final book | Approved Final book | IRN | H | H | RA | RA | RA | ✓ | --- |
| E4 | Issue Inspection Certificate (IC) | Project Spec & ITP & IRN | Appove Final book & IRN | IC | H | H | RA | RA | RA | ✓ | --- |
| E5 | Final book | Project Spec & ITP | Project Spec & ITP | FDB | H | RA | RA | RA | RA | ✓ | --- |

Note:

1. According to approved VPIS.
2. First layer inspection is a Hold point for TPI.
3. If Material Certificate is not original, then SSC test and laboratory report is required.