



طرح نگهداشت و افزایش تولید 27 مخزن

**SPECIFICATION FOR PIPING CONSTRUCTION, FABRICATION &
ERECTION**

نگهداشت و افزایش تولید میدان نفتی بینک

D01	OCT. 2022	IFA	M.Noori	M.Fakharian	M.Mehrshad	
D00	AUG. 2021	IFC	M.Asgharnejad	M.Fakharian	Sh.Ghalikar	
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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
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0.0 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

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields CLIENT (NISOC)
PROJECT:	Binak Oilfield Development – General Facilities
EPD/EPC CONTRACTOR:	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 EPC CONTRACTOR and approved by GC & COMPANY (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 COMPANY rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.
MAY:	Is used where a provision is completely discretionary.

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1.0 SCOPE (MOD.)

This specification gives amendment and supplement to IPS-C-PI-240 (2), "Construction Standard for Plant Piping System".

It shall be used in conjunction with data/requisition sheets for present document subject.

IPS-C-PI-240 (2) contains All shop or field fabrication, assembly and installation of process and utility piping system in oil, gas and petrochemical plants shall be performed according to relevant sections of B 31.3 as applicable, and additional requirements are specified in this Standard. In case of conflict between this Standard and above-mentioned ASME standards, the requirements of this Standard shall govern).

GUIDANCE FOR USE OF THIS DOCUMENT

The amendments/supplement to the related IPS Standard(s) given in this document are directly related to the equivalent sections or clauses in the IPS Standard(s). For clarity, the section and paragraph numbering of the IPS Standard(s) has been used as long as possible. Where clauses in IPS are referenced within this document, it shall mean those clauses are amended by this document. Clauses in" IPS" that are not amended by this document shall remain valid as written.

For ease of reference, the clause or section numbering of the related IPS Standard(s) has been used throughout this specification. For the purpose of this specification, the following definitions shall hold:

Sub. (Substitution): The IPS Std. Clause is deleted and replaced by a new clause.

Del. (Deletion): The IPS Std. Clause is deleted without any replacement.

Add. (Addition): A new clause with a new number is added.

Mod. (Modification): Part of the IPS Std. Clause is modified, and/or a new description and/or condition is added to that clause.

2.0 NORMATIVE REFERENCES (MOD.)

2.1 LOCAL CODES AND STANDARDS

- IPS-C-PI-240 (2) Construction Standard for Plant Piping System

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2.2 INTERNATIONAL CODES AND STANDARDS

- ASME B31.3 Process Piping/American Society Of Mechanical Engineers Relevant Parts

2.3 THE PROJECT DOCUMENTS

- BK-GNRAL-PEDCO-000-PI-DC-0001 Piping Design Criteria
- BK-SSGRL-PEDCO-320-PI-SP-0001 Piping Material Specification
- BK-PPL-PEDCO-320-PI-SP-0001
- BK-GCS-PEDCO-120-PI-SP-0001
- BK-GNRAL-PEDCO-000-PI-SP-0006 Specification for Painting
- BK-GNRAL-PEDCO-000-PI-SP-0013 Specification For Coating Of Underground Piping
- BK-GNRAL-PEDCO-000-PI-SP-0019 Specification For Insulation
- BK-GNRAL-PEDCO-000-PI-SP-0010 Specification for Plant Piping Systems Pressure Testing
- BK-GNRAL-PEDCO-000-PI-SP-0011 Specification for Welding of Plant Piping System
- BK-GNRAL-PEDCO-000-PI-SP-0014 Specification for Pipe Supports
- BK-SSGRL-PEDCO-110-PI-DW-0002 Piping Assembly Drawing
- & BK-GCS-PEDCO-120-PI-DW-0002

2.4 ENVIRONMENTAL DATA (ADD.)

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

3.0 DEFINITIONS AND TERMINOLOGY

No amendments or supplements are to state.

4.0 ABBREVIATIONS

No amendments or supplements are to state.

5.0 UNITS

No amendments or supplements are to state.

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6.0 GENERAL REQUIREMENTS

No amendments or supplements are to state.

7.0 FABRICATION (MOD.)

7.1 GENERAL

No amendments or supplements are to state.

7.2 DIMENSIONAL TOLERANCES

No amendments or supplements are to state.

7.3 PIPE JOINTS

No amendments or supplements are to state.

7.4 WELDING (MOD.)

7.4.2 End preparation, alignment and fit-up of pipe pieces to be welded, preheating, welding, post heating, inspection and post weld heat treatment shall conform to this Standard and IPS-C-PI-290 and project specification BK-GNRAL-PEDCO-000-PI-SP-0011. (SUB.)

7.5 SCREWED PIPING (THREADED JOINTS)

No amendments or supplements are to state.

7.6 FLANGED JOINTS (MOD.)

Flange faces shall be free from weld spatter, mars and scratches. (MOD.)

7.7 BRANCH CONNECTIONS (SUB.)

Branch connection and its reinforcement shall be in accordance with piping plan and isometric drawings as stated in IPS-E-PI-240 and project specifications:

“BK-GNRAL-PEDCO-000-PI-DC-0001” and “BK-SSGRL-PEDCO-320-PI-SP-0001 & BK-PPL-PEDCO-320-PI-SP-0001 & BK-GCS-PEDCO-120-PI-SP-0001”.

7.8 CUTTING AND TRIMMING OF STANDARD FITTINGS

No amendments or supplements are to state.

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7.9 JACKETED PIPING (DEL.)

7.10 SHOP-FABRICATION/PRE-FABRICATION

No amendments or supplements are to state.

7.11 PIECE MARKING

No amendments or supplements are to state.

8.0 FIELD INSTALLATION (MOD.)

8.1 GENERAL CONSIDERATION

No amendments or supplements are to state.

8.2 PIPING ROUTING

No amendments or supplements are to state.

8.3 COLD SPRING/COLD PULL (DEL.)

8.4 DELIVERY, HANDLING AND INSTALLATION OF EXPANSION JOINTS

No amendments or supplements are to state.

8.5 INSTALLATION OF FLANGES (MOD.)

8.5.1 Extra care shall be taken for flange connections to pumps and compressors. The flange connections to this equipment shall be checked for misalignment, excessive gap, etc., after the final alignment of the equipment is over. The joint shall be made up after obtaining approval of the Engineer. (SUB.)

8.5.2 Temporary protective covers shall be retained on all flange connections of pumps and compressors until the piping is finally connected, so as to avoid any foreign material from entering this equipment. (SUB.)

8.5.4 (DEL.)

8.6 INSTALLATION OF VALVES

No amendments or supplements are to state.

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8.7 INSTALLATION OF INSTRUMENT AND RELATED PIPING

Adequate space and accessibility in piping system shall be considered in order to change the corrosion monitoring instruments by retriever(ADD).

8.8 VENTS AND DRAINS (SUB.)

High point vents and low point drains shall be provided as per the instructions of the Engineer, even if these are not shown in the working drawings. The details of vents shall be as per project specifications BK-GNRL-PEDCO-000-PI-DC-0001 and “BK-SSGRL-PEDCO-320-PI-SP-0001 & BK-PPL-PEDCO-320-PI-SP-0001 & BK-GCS-PEDCO-120-PI-SP-0001” and BK-SSGRL-PEDCO-110-PI-DW-0002 & BK-GCS-PEDCO-120-PI-DW-0002.

8.9 PUMP, COMPRESSOR AND STEAM TURBINE PIPING (MOD.)

8.9.3 (DEL.)

8.10 PIPING THROUGH WALLS AND CONCRETE FLOORS

No amendments or supplements are to state.

8.11 BURIED PIPING (MOD.)

8.11.7 Buried piping shall have protective coating applied in accordance with IPS-C-TP-274 and project specification BK-GNRL-PEDCO-000-PI-SP-0013. The grade of protective coating will be as specified in mentioned standard and specification.
(SUB.)

8.12 PIPE SUPPORTS (SUB.)

All supports shall be strictly as per drawings and IPS-G-PI-280 and project specification BK-GNRL-PEDCO-000-PI-SP-0014. (SUB.)

8.13 WINTERIZING AND STEAM TRACING (DEL.)

8.14 INTERNAL CLEANING

No amendments or supplements are to state.

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9.0 INSPECTION AND TESTING (MOD.)

9.1 MATERIAL CHECK

No amendments or supplements are to state.

9.2 DIMENSIONAL CHECK

No amendments or supplements are to state.

9.3 INSPECTION OF WELDS (SUB.)

Welds shall be inspected and tested in accordance with IPS-C-PI-290 and project specification BK-GNRAL-PEDCO-000-PI-SP-0011.

9.4 PRESSURE TEST (SUB.)

After completion of all erection works all piping systems shall be pressure tested in accordance with IPS-C-PI-350 and project specification BK-GNRAL-PEDCO-000-PI-SP-0010. Executor shall develop pressure test packages for engineer review and approval prior to commencing testing.

10.0 PAINTING (MOD.)

10.1 SURFACE PREPARATION (SUB.)

Outside surface of piping to be painted shall be prepared according to IPS-C-TP-101 and project specification BK-GNRAL-PEDCO-000-PI-SP-0006. They shall always be completely dry and free from burrs, weld spatter, flux, rust, loose scale, dirt, dust, grease, oil and other foreign matter before any paint is applied.

10.2 COLOR CODE

No amendments or supplements are to state.

10.3 FIELD PAINTING (SUB.)

Field painting of hot and cold Uninsulated lines shall be as per IPS-C-TP-102 and project specification BK-GNRAL-PEDCO-000-PI-SP-0006.

11.0 INSULATION (SUB.)

Lines to be insulated will be so noted on spool drawings and shall be insulated in accordance with IPS-C-TP-701 and project specification BK-GNRAL-PEDCO-000-PI-SP-0019.

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12.0 COATING (SUB.)



Coating of plant underground piping shall be applied (Using Solvent Free Epoxy), inspected and tested in accordance with IPS-C-TP-274 and project specification BK-GNRAL-PEDCO-000-PI-SP-0013. Cathodic protection is required when piping is buried.

13.0 LINING (DEL.)

14.0 BENDING & FORMING (ADD)



14.1 GENERAL

Galvanized carbon steel piping, if required, shall be cold bended so as not to damage galvanized surfaces.

Ending of pipes shall only be done where indicated on the isometric drawings.

If the pipe contains a longitudinal weld, this weld shall be located in the neutral zone.

A detailed bending procedure shall be supplied by the Executor for the Consultant.

Bending operations shall not start until procedure has been approved by the Engineer.

Cold bending area shall be stress relieving which are subject to sour services.

Elbows shall be long radius (1.5 diameter radius, as specified in the relevant piping material class) unless otherwise noted on drawings.

Mitered elbows are not allowed, except on lines open to the atmosphere such as safety valves open discharge or turbines exhaust lines.

14.2 COLD BENDING

Cold carbon steel pipe bending, normally up to DN 50 (NPS 2) shall be done in pipe bending machines or presses using formers. No wrinkling, excessive thinning or flattening is allowed. Excessive scratches, gages or die marks shall be grinded for thickness measurement; if the remaining thickness is less than minimum requirement it shall be rejected.

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For cold pipe bending of other material the written instruction of site Inspector shall be considered.

14.3 HOT BENDING

Hot bending is not permitted unless otherwise by written instruction of site inspector.