طرح نگهداشت و افزایش تولید 27 مخزن

ARCHITECTURAL DESIGN CRITERIA

نگهداشت و افزایش تولید میدان نفتی بینک

D01	MAY. 2022	IFA	R.Berlouie	M.Fakharian	M.Mehrshad	
D00	FEB. 2022	IFC	R.Berlouie	M.Fakharian	M.Mehrshad	
Rev.	**Date**	**Purpose of Issue/Status**	**Prepared by:**	**Checked by:**	**Approved by:**	**CLIENT Approval**

Class:20000 | **CLIENT Doc. Number: F0Z-707236**

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
1	X				
2	X				
3	X				
4	X				
5	X	X			
6	X	X			
7	X				
8	X				
9	X	X			
10	X				
11	X				
12		X			
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					

PAGE	D00	D01	D02	D03	D04
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					
101					
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					

CONTENTS

1.0 INTRODUCTION 4

2.0 SCOPE 4

3.0 NORMATIVE REFERENCES 5

3.1 LOCAL CODES AND STANDARD 5
3.2 INTERNATIONAL CODES AND STANDARD 5
3.3 THE PROJECT DOCUMENTS 6
3.4 ENVIRONMENTAL DATA 7
3.5 ORDER OF PRECEDENCE 7
3.6 ABBREVIATIONS 7
3.7 UNITS 7

4.0 BASIS OF BUILDING DESIGN 8

4.1 GENERAL 8
4.2 DOCUMENTS 8

5.0 CONSTRUCTION TYPES 9

5.1 NON-BLAST BUILDINGS 9
5.2 SHELTER BUILDINGS 9
5.3 BLAST BUILDINGS 10
5.4 BUILDING TYPES 10

6.0 SAFETY MEASURMENTS 10

7.0 APPLICABLE DOCUMENTS 11

8.0 SUBMITTAL 12

1.0 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 Company (NISOC)
PROJECT:	Binak Oilfield Development – General Facilities
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.

2.0 SCOPE

This document covers minimum necessary requirements for the design, construction, and inspection of PROJECT's buildings, including Gas Compression Station's newly built and extension buildings, and well maintenance facilities.

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

3.0 NORMATIVE REFERENCES

3.1 LOCAL CODES AND STANDARD

- IPS-E-CE-200 Engineering Standard For Concrete Structures
- IPS-C-CE-200 Construction Standard For Concrete Structures
- IPS-E-CE-500 Engineering Standard For Loads
- IPS-M-CE-105(2) Material Standard For Building Materials
- IPS-E-CE-120 Engineering Standard For Foundations
- IPS-E-CE-130 Engineering Standard For Piles
- IPS-C-CE-112 Construction Standard For Earthworks
- IPS-C-CE-132 Construction Standard For Foundations, Piles, Retaining Walls
- IPS-C-TP-102 Construction Standard for Painting
- IPS-G-SF-900 General Standard for Noise Control & Vibration
- IPS-G-IN-220 Engineering & Installation Standard for Control Centres
- Neufert Architect's Data
- Bulletin 178 will be followed for the non-industrial buildings' surfaces
- NIOC seismic design code for petroleum facilities and structures publication no. 038-3rd.
- NPCS – National Petrochemical Company's standards for foot path and access roads.
- NPCS-ES-ST-08 Engineering Standard for Building
- NPCS-CS-ST-08 Construction Standard for Building
- IBC International Building Code
- State Management and Planning Organization (Bulletin No. 55 of State Management and Planning Organization)
- Iran National Building Code Chapter 3, 5, 19 (Refer To Specification for Civil & Structural Design Criteria)

3.2 INTERNATIONAL CODES AND STANDARD

- ASTM American Society for Testing Materials Relevant Parts (A36/A36M, A185, A307, A497, A615, C31, C39, C90, C91, C94, C126, C143, C145, C150, C156, C216, C260, C309, C476, C494, C595, C652 , D698)
- **American Codes:**
  - o UBC Uniform Building Code

- o UMC — Uniform Mechanical Code
- o UFC — Uniform Fire Code
- o IPC — International Plumbing Code

- **Safety Code:**
  - o NPFA — National Fire Protection Association

- **Other International Standards:**
  - o IEC 364 — Electrical Installation Requirements
  - o ISO 31/VII — Quantities and Units of Acoustics
  - o ISO140-9 — Room-to-room sound attention
  - o ISO717-Part 1 — Airborne sound insulation in buildings and interior building elements.
  - o ISO717-Part 2 — Airborne sound insulation of façade

- IRI Design Code 2800 — Iranian Building Seismic Design Code – Standard no. 2800
- National Building Code — Iranian National Building Codes (All Chapters 1-22)
- Construction Instructions — Bulletin No. 55 Of Iranian State Management and Planning Organization
- BSI — British Standard Institution (BS 4449, BS 4483, BS5628)
- ANSI — American National Standards Institute (A10.9)
- ASCE — American Society of Civil Engineers (ASCE 7-05)
- ACI — American Concrete Institute (ACI 214, ACI 301, ACI 302, ACI 305, ACI 308, ACI 309, ACI 318, ACI 315, ACI 350R, ACI 347, ACI 530 1-95, ACI 304R, ACI 117, ACI 212-3R, ACI 222R, ACI 224-3R)
- STI (Steel Door Institution)
- Under Writers Labratories

When national Codes do not conform to International Standards, the more restrictive standard will govern.
-In case of contradiction, the following order of precedence shall apply:
This Specification
The other Project Specifications listed hereafter
American Codes and Standards

3.3 THE PROJECT DOCUMENTS

- BK-GNRAL-PEDCO-000-PR-DB-0001 Process Basis of Design

3.4 ENVIRONMENTAL DATA

Refer to "Process Basis of Design, document number BK-GNRAL-PEDCO-000-PR-DB-0001" section 7.

3.5 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 the CLIENT.

3.6 ABBREVIATIONS

Industry standard abbreviations shall take their usual meaning. Outlined herein are the most common, which may be used in this and other project documents:

AFC	Approved For Construction
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Material
BS	British Standard
HSE	Health ,Safety & Environment
HVAC	Heating Ventilation and Air Conditioning
IP	Ingress Protection
IPS	Iranian Petroleum Standard
ISO	International Organization for Standardization
NISOC	National Iranian South Oil Company

3.7 UNITS

SI metric system of measurement including “°C” and “bar” shall be used in design of the buildings.

4.0 BASIS OF BUILDING DESIGN

4.1 GENERAL

As mentioned earlier, this document covers only the minimum requirements for the design, material supply and construction of buildings. Deviations are only allowed to adapt materials to the local market, or to update the design to meet local laws, regulations and other requirements that may arise during the detailed engineering phase.
The design of buildings shall include:

a) Above ground shelters and buildings.

b) External and internal walls.

c) Ground and roof slabs.

d) Internal and external finishing.

f) Technical installations that include:

- HVAC system
- Plumbing
- Electrical and Lighting
- Instrumentation and Telecommunication
- Fire-fighting system.

4.2 DOCUMENTS

The following engineering documents shall be produced during the Detail Design phase. All documents for construction shall be prepared using the latest version of AUTOCAD software, with the actual version subject to approval:

a) Architectural documents.

b) Structural and foundation documents.

c) Electrical and telephone system documents.

d) Plumbing and sanitary system documents.

e) HVAC system documents.

f) Safety system documents.

g) All other details for complete supply of materials and construction.

The battery limit for the design of the building services is at buildings sidewalks boundary.

The layout for the buildings shall be shown on the applicable building drawings. During the Detailed Design phase, all building dimensions shall be developed based on actual selected equipment size, systems, and maintenance clearance requirements and other operational considerations as approved.

It is noteworthy to mention that newly built buildings inside the site shall follow above building types according to their usage and safety requirements.

5.0 CONSTRUCTION TYPES

The following table should be considered as the PROJECT's building types:

No.	Building Type
1	Non-Blast Building
2	Shelter Building
3	Blast Building

All building shall be surrounded by concrete pavement, unless otherwise stated. (Minimum width 1.2 m)

5.1 NON-BLAST BUILDINGS

All exterior walls shall be "cavity walls" with 2 layers of brick-wall and thermal insulation; details shall follow technical requirements. Facades shall be covered by White/Colored Abbasabad travertine stone (super fine grade).

Wall base shall be covered by white travertine stone (h = 40cm above surrounding pavement), unless otherwise stated.

5.2 SHELTER BUILDINGS

Walls of shelter buildings like workshops shall be considered at least 3 m of height, and the rest shall be covered by sandwich panel, unless otherwise stated.

The joint of masonry wall and sandwich panels shall be sealed using proper detail.

Wall base shall be covered by white travertine stone (h = 40cm above surrounding pavement), unless otherwise stated.

5.3 BLAST BUILDINGS

Concrete walls shall be cleaned thoroughly and get fine improvement before painting. Facades shall be covered by White/Colored Abbasabad travertine stone (super fine grade).

Wall base shall be covered by white travertine stone (h = 40cm above surrounding pavement), unless otherwise stated.

5.4 BUILDING TYPES

The building types covered within the scope this PROJECT are:

- Control Building (**type III**)
- Extensions of Existing Electrical Buildings **(type I** and **type III**)
- Gas Compressor Shelter (**type II**)
- Chemical Injection Packages/Chemical Storage Shelter (**type II**)
- Utility Shelter (**type II**)
- Fire Water Pumps Shelter (**type II**)
- Fire Shed (**type II**)
- Diesel Generator Shelter of Well Pads – Work-over and New Wells (**type II**)
- Switchgear Building of Well Pads – work-over and New Wells (**type I**)
- Wellhead Control Panel / Hydraulic Power Unit Shelter of Well Pads – New wells(**type II**)
- Security Building of Well Pads – work-over and New Wells(**type I**)

6.0 SAFETY MEASURMENTS

All buildings shall comply with local and international codes and standards for HSE, whichever are stricter. CONTRACTOR shall control the compliance in detail design, construction, and procurement phases. For the detail refer to the PROJECT's safety layouts and specifications.

7.0 APPLICABLE DOCUMENTS

The following is the list of documents that this “Design Criteria” is applied to:

Architectural Drawing For WHCP/HPU Shelter of Well Pads - W018	BK-W018S-PEDCO-110-AR-DW-0001
Architectural Drawing For WHCP/HPU Shelter of Well Pads - W028	BK-W028-PEDCO-110-AR-DW-0001
Architectural Drawing For Diesel Generator Shelter of Well Pads - W046S	BK-W046S-PEDCO-110-AR-DW-0001
Architectural Drawing For WHCP/HPU Shelter of Well Pads - W046S	BK-W046S-PEDCO-110-AR-DW-0002
Architectural Drawing For Switchgear Building of Well Pads - W046S	BK-W046S-PEDCO-110-AR-DW-0003
Architectural Drawing For Security Building of Well Pads - W046S	BK-W046S-PEDCO-110-AR-DW-0004
Architectural Drawing For WHCP/HPU Shelter of Well Pads - W035	BK-W035-PEDCO-110-AR-DW-0001
Architectural Drawing For WHCP/HPU Shelter of Well Pads - W008N	BK-W008N-PEDCO-110-AR-DW-0001
Architectural Drawing For Diesel Generator Shelter of Well Pads - W007S	BK-W007S-PEDCO-110-AR-DW-0001
Architectural Drawing For WHCP/HPU Shelter of Well Pads - W007S	BK-W007S-PEDCO-110-AR-DW-0002
Architectural Drawing For Switchgear Building of Well Pads - W007S	BK-W007S-PEDCO-110-AR-DW-0003
Architectural Drawing For Security Building of Well Pads - W007S	BK-W007S-PEDCO-110-AR-DW-0004
Architectural Drawing For Diesel Generator Shelter of Well Pads - BK-14	BK-BK14-PEDCO-110-AR-DW-0001
Architectural Drawing For Switchgear Building of Well Pads - BK-14	BK-BK14-PEDCO-110-AR-DW-0002
Architectural Drawing For Security Building of Well Pads - BK-14	BK-BK14-PEDCO-110-AR-DW-0003
Architectural Drawing For Diesel Generator Shelter of Well Pads - BK-12	BK-BK12-PEDCO-110-AR-DW-0001
Architectural Drawing For Switchgear Building of Well Pads - BK-12	BK-BK12-PEDCO-110-AR-DW-0002
Architectural Drawing For Security Building of Well Pads - BK-12	BK-BK12-PEDCO-110-AR-DW-0003
Architectural Drawing For Diesel Generator Shelter of Well Pads - BK-15	BK-BK15-PEDCO-110-AR-DW-0001
Architectural Drawing For Switchgear Building of Well Pads - BK-15	BK-BK15-PEDCO-110-AR-DW-0002
Architectural Drawing For Security Building of Well Pads - BK-15	BK-BK15-PEDCO-110-AR-DW-0003
Architectural Drawing For Diesel Generator Shelter of Well Pads - BK-05	BK-BK05-PEDCO-110-AR-DW-0001
Architectural Drawing For Switchgear Building of Well Pads - BK-05	BK-BK05-PEDCO-110-AR-DW-0002
Architectural Drawing For Security Building of Well Pads - BK-05	BK-BK05-PEDCO-110-AR-DW-0003
Architectural Detail Drawing For Control Building	BK-GCS-PEDCO-120-AR-DW-0001
Architectural Detail Drawing For Extension of Existing Elect. Building	BK-GCS-PEDCO-120-AR-DW-0002
Architectural Drawing For Gas Compressors Shelter	BK-GCS-PEDCO-120-AR-DW-0003
Architectural Drawing For Chemical Inj. Packages/Chemical Storage Shelter	BK-GCS-PEDCO-120-AR-DW-0004
Architectural Drawing For Utility Shelter	BK-GCS-PEDCO-120-AR-DW-0005
Architectural Drawing For Fire Water Pumps Shelter	BK-GCS-PEDCO-120-AR-DW-0006
Architectural Drawing For Fire Shed	BK-GCS-PEDCO-120-AR-DW-0007

8.0 SUBMITTAL

The CONTRACTOR shall submit the architectural design to the client for approval during the detail design. The submittals shall include, but not limited to, the following:

- Drawings showing proposed layout of architecture work, indicating material types and quantities.
- Schedules showing program of implementation for each type of architecture work.
- Samples of all materials to be used in the project shall be submitted upon request of the CLIENT.
- A comprehensive “Operations and Maintenance Manual” shall be compiled by the contractor and submitted to the CLIENT for approval.