



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شماره پیمان:

CALCULATION NOTE FOR OUTDOOR AREA LIGHTING SYSTEM

شماره صفحه ۱: از ۷

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D02	0001	CN	EL	120	PEDCO	GCS	BK

طرح نگهداشت و افزایش تولید ۲۷ مخزن

CALCULATION NOTE FOR OUTDOOR AREA LIGHTING SYSTEM

نگهداشت و افزایش تولید میدان نفتی بینک

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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



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REVISION RECORD SHEET

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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.

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.

2.0 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 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 Client rather than by an EPC/EPD Contractor, supplier or Vendor.
MAY:	Is used where a provision is completely discretionary.

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3.0 SCOPE

This specification describes the practices that shall be employed and the Standards that will be required to be met for the Outdoor Lightings Illumination

4.0 NORMATIVE REFERENCES

4.1 CODES AND STANDARDS

- IPS-E-EL-100 Engineering Standard For Electrical System Design (Industrial And Non-Industrial)

4.2 THE PROJECT REFERENCE DOCUMENTS

- BK-GNRAL-PEDCO-000-PR-DB-0001 Process Basis Of Design
- BK-GNRAL-PEDCO-000-EL-DC-0001 Electrical System Design Criteria
- BK-GNRAL-PEDCO-000-EL-SP-0007 Specification For Lighting & Small Power System
- BK-GCS-PEDCO-120-PI-PY-0001 Unit Plot Plan Drawing
- BK-GCS-PEDCO-120-SA-PY-0002 Hazardous Area Classification Layout

5.0 LANGUAGE AND SYSTEM OF UNITS

All documentation, drawings, data, etc. furnished by the manufacturer shall be in English. SI metric system of measurement shall be used except for pipe and pipe fitting sizes, flange ratings and nozzle dimensions in which inch will be used.

6.0 DESIGN SOFTWARE

Calculation is performed with version 4.13 of DIALUX Software.

7.0 CONCLUSION

According to IPS-E-EL-100, illumination level for each area has been lighted.



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TABLE 15 - ILLUMINANCES LEVELS

AREA OR ACTIVITY	MINIMUM ILLUMINANCE LUX	ELEVATION MILLIMETER
I PROCESS AREAS		
A) General process units		
Pump rows, valves, manifolds	50	Ground
Heat exchangers	30	Ground
Maintenance platforms	10	Floor
Operating platforms	50	Floor
Cooling towers (equipment areas)	50	Ground
Furnaces	30	Ground
Ladders and stairs (inactive)	30	Floor
Ladders and stairs (active)	50	Floor
Gage glasses	50	Eye level
Instruments (on process units)	50	Eye level
Compressor houses	200	Floor
Separators	50	Top of bay
General area	10	Ground
B) Control rooms and houses		
Ordinary control house		
Instrument panel	300	Floor
Console	300	1700
Back of panel	300	760
Central control house	100	760
Instrument	500	Floor
Back of pane	500	1700
	100	900
C) Specialty process units		
Conveyors		
Conveyor transfer points	20	Surface
	50	Surface
II NONPROCESS AREA		
A) Loading, unloading, and cooling water pump houses, Pump area		
General control area	50	Ground
Control panel	150	Floor
	200	1100
B) Boiler and air compressor plants		
Indoor		
Outdoor equipment 50	200	Floor
	50	Ground
C) Tank fields (where lighting is required)		
Ladders and stairs		
Gating area	5	Floor
Manifold area	10	Ground
	5	Floor
D) Loading racks		
General area		
Tank car	50	Floor
Tank trucks, loading point	100	Point
	100	Point
E) Tanker dock facilities		
F) Electrical substations and switch yards		
Outdoor switch yards		
General substation (outdoor)	20	Ground
Substation operating aisles	20	Ground
General substation (indoor)	150	Floor
Switch racks	50	Floor
	50	1200
G) Plant road lighting (where lighting is required)		
Frequent use (trucking)	4	Ground
Infrequent use	2	Ground
H) Plant parking lots		
	1	Ground
I) Aircraft obstruction lighting		

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III Buildings		
A) Offices	500	
B) Laboratories		
Qualitative, quantitative and physical test		
Research, experimental	500	900
Pilot plant, process and specialty	500	900
Glassware, washrooms	300	Floor
Fume hoods	300	900
Stock rooms	300	900
	150	Floor
C) Warehouses and stock rooms		
Indoor bulk storage		
Outdoor bulk storage	50	Floor
Large bin storage	5	Ground
Small bin storage	50	760
Small parts storage	100	760
Counter tops	200	760
	300	1200
D) Repair shop		
Large fabrication		
Bench and machine work	200	Floor
Crane way, aisles	500	760
Small machine	150	Floor
Sheet metal	300	760
Electrical	200	760
Instrument	200	760
	300	760
E) Change housed		
Locker room, shower		
Lavatory	100	Floor
	100	Floor
F) Clock house and entrance gatehouse		
Card rack and clock area		
Entrance gate, inspection	100	Floor
General	150	Floor
	50	Floor
G) Cafeteria		
Eating	300	760
Serving area	300	900
Food preparation	300	900
General, halls, etc.	100	Floor
H) Garage and firehouse		
Storage and minor repairs	100	Floor
I) First aid roomed	700	760



Comparison of Lighting Between Standard & Calculation (LUX)			
Item	Outdoor Area	Standard	Calculation (Av)
1	Process Area	10	19
	Utility Area	10	24

According to above table, the arrangement on lighting poles & flood lights is sufficient. & therefore the layout can be issued.

8.0 LIGHTING CALCULATION – DETAIL REPORT

It is assumed that lighting tower exist & new floodlight has been installed on them. Despite this assumption, 3 towers have been added.

DIALUX report has been attached in "Attachment"