



شماره پیمان:  ۰۵۳ - ۰۷۳ - ۹۱۸۴	CALCULATION NOTE FOR LIGHTING SYSTEM OF WELL PADS SECURITY BUILDING							شماره صفحه: ۱ از ۷	
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	SSGRL	PEDCO	110	EL	CN	003		D01

## طرح نگهداشت و افزایش تولید ۲۷ مخزن

## CALCULATION NOTE FOR LIGHTING SYSTEM OF WELL PADS SECURITY BUILDING

## نگهداشت و افزایش تولید میدان نفتی بینک



D01	Oct. 2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D00	Apr. 2022	IFC	H.Shakiba	M.Fakharian	M.Mehrshad	
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Class: 2

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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.

### 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 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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## 2.0 SCOPE

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

## 3.0 NORMATIVE REFERENCES

### 3.1 CODES AND STANDARDS

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

### 3.2 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

## 4.0 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.

## 5.0 LIGHTING SYSTEM

The lighting system will provide a uniform and adequate light distribution in all working areas, the minimum average illumination levels will be as per IPS-E-EL-100(1). Major areas indicated in the below table:





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TABLE 15 - ILLUMINANCES LEVELS

AREA OR ACTIVITY	MINIMUM ILLUMINANCE LUX	ELEVATION MILLIMETER
<b>I PROCESS AREAS</b>		
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	300	Floor
Instrument panel	300	1700
Console	300	760
Back of panel	100	760
Central control house	500	Floor
Instrument	500	1700
Back of pane	100	900
C) Specialty process units		
Conveyors	20	Surface
Conveyor transfer points	50	Surface
<b>II NONPROCESS AREA</b>		
A) Loading, unloading, and cooling water pump houses, Pump area	50	Ground
General control area	150	Floor
Control panel	200	1100
B) Boiler and air compressor plants		
Indoor	200	Floor
Outdoor equipment 50	50	Ground
C) Tank fields (where lighting is required)		
Ladders and stairs	5	Floor
Gating area	10	Ground
Manifold area	5	Floor
D) Loading racks		
General area	50	Floor
Tank car	100	Point
Tank trucks, loading point	100	Point
E) Tanker dock facilities		
F) Electrical substations and switch yards		
Outdoor switch yards	20	Ground
General substation (outdoor)	20	Ground
Substation operating aisles	150	Floor
General substation (indoor)	50	Floor
Switch racks	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		900
Research, experimental	500	900
Pilot plant, process and specialty	500	Floor
Glassware, washrooms	300	900
Fume hoods	300	900
Stock rooms	300	Floor
	150	
C) Warehouses and stock rooms		
Indoor bulk storage		Floor
Outdoor bulk storage	50	Ground
Large bin storage	5	
Small bin storage	50	760
Small parts storage	100	760
Counter tops	200	760
	300	1200
D) Repair shop		
Large fabrication		Floor
Bench and machine work	200	760
Crane way, aisles	500	Floor
Small machine	150	760
Sheet metal	300	760
Electrical	200	760
Instrument	200	760
	300	760
E) Change housed		
Locker room, shower		Floor
Lavatory	100	Floor
	100	
F) Clock house and entrance gatehouse		
Card rack and clock area	100	Floor
Entrance gate, inspection	150	Floor
General	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

## 6.0 DESIGN SOFTWARE

Calculation is performed with version 4.13 of DIALUX Software.

## 7.0 LIGHTING CALCULATION – DETAIL REPORT

DIALUX report has been attached in “Attachment”