طرح نگهداشت و افزایش تولید 27 مخزن

CAUSE & EFFECT DIAGRAM

نگهداشت و افزایش تولید میدان نفتی بینک

D00	MAY.2022	IFC	M.Aryafar	M.Fakharian	M.Mehrshad	
Rev.	**Date**	**Purpose of Issue / Status**	**Prepared by:**	**Checked by:**	**Approved by:**	**CLIENT Approval**

Class: 2 **CLIENT Doc. Number:** **F0Z-708805**

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	Page	D00	D01	D02	D03	D04
1	X					65					
2	X					66					
3	X					67					
4	X					68					
5	X					69					
6	X					70					
7	X					71					
8	X					72					
9	X					73					
10	X					74					
11	X					75					
12	X					76					
13	X					77					
14	X					78					
15	X					79					
16						80					
17						81					
18						82					
19						83					
20						84					
21						85					
22						86					
23						87					
24						88					
25						89					
26						90					
27						91					
28						92					
29						93					
30						94					
31						95					
32						96					
33						97					
34						98					
35						99					
36						100					
37						101					
38						102					
39						103					
40						104					
41						105					
42						106					
43						107					
44						108					
45						109					
46						110					
47						111					
48						112					
49						113					
50						114					
51						115					
52						116					
53						117					
54						118					
55						119					
56						120					
57						121					
58						122					
59						123					
60						124					
61						125					
62						126					
63						127					
64						128					

NOTES	Rev.
1- Following ESD levels are defined:	
ESD 0: Total Plant Shutdown With Automatic Depressurizing	
ESD 1A : Process Emergency ShutDown With Depressurizing	
ESD 1: Process Emergency ShutDown Without Depressurizing	
ESD2A :Train shut down With depressurizing	
ESD 2: Train shut down Without depressurizing	
ESD 3: Equipment shut down	
2- All electrical source except essential power source shall be isolated.	
3- Cause & Effect diagrams of packages will be prepared by vendors.	
4-Definition of symbols:	
A:Active	
C: Close	
O: Open / Start / On	
S: Shut Down / Stop / Off	
T: Trip	
I:/Isolation	
P: Permissive	
PB:Push Button	
R: Reset	
V: Override	
TD: Time Delay	
5-Adjustable Delay	
6-Time delay	

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه نیروی ایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 0-Total Plant Shutdown With Automatic Depressurizing

EFFECT

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.	No	TAG No.	Equipment / Description	P&ID	NOTE
2		0	Manually from Central Control Room (CCR)	-		PB	2	ESD 0	Total plant shut down	-	
3		0	Confirmed Flammable Gas in HVAC air in-take (from F&G system)	-			3		Emergency & Normal Power isolation which will trip	-	(2)
4		0	UPS Failure	-			4		UPS Battery isolation by time delay.	-	(5 ,6)
5			**Total Plant Shut Down With Automatic Depressurizing**			ESD 0	5	ESD-1A	Process Emergency ShutDown With Depressurizing	-	

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

NISOC

شرکت توسعه نیروی ایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 1A-Process Emergency ShutDown With Depressurizing

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.
1		0	Total Plant Shut Down With Automatic Depressurizing	-		ESD-0
2		1	Process Emergency ShutDown Without Depressurizing(Activation of ESD-1 by time delay)	-		ESD-1
3		1A	Confirmed Flammable Gas in fire zone (from F&G system)	-		
7		1A	Confirm fire in process area			
8		1A	Manually from Central Control Room (CCR) by time delay			PB
9		1A	**Process Emergency ShutDown With Depressurizing**	-		ESD 1A
10						
11						
12						
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						

EFFECT

No	Equipment / Description	P&ID	NOTE
TAG No.			
ESD 1A	Process Emergency ShutDown With Depressurizing	-	
ESD 1	Process Emergency ShutDown Without Depressur	-	
ESD 2A	Train shut down With depressurizing		
BDV-2141	Gas Compressor Discharge Drum Blow Down Valve(Afte	BK-GCS-PEDCO-120-PR-PI-0012	
BDV-2151	Dehydration Package Blow Down Valve(After ESDV's clo	BK-GCS-PEDCO-120-PR-PI-0013	
-	Power Isolation In Process Area		
XV-2110	Inlet Knock Out Drum Blow Down Valve(by time delay)	BK-GCS-PEDCO-120-PR-PI-0005	
A			
A			
I			
A			
A			
A			
O			
O			
O			

NISOC

تگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه نیروی ایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 1- Process Emergency ShutDown Without Depressurizing

EFFECT

No	Rev.	Level	DESCRIPTION (CAUSE)	P & ID	Note	TAG No.	No	ESD 1	ESD 1A	ESD 2	ESD 3	PK-2207	ESDV-2102	ESDV-2101	ESDV-2142 ESDV-2143	P-2203 A/B	PK-2208		
							TAG No.	ESD 1	ESD 1A	ESD 2	ESD 3	PK-2207	ESDV-2102	ESDV-2101	ESDV-2142 ESDV-2143	P-2203 A/B	PK-2208		
							Equipment / Description	Process Emergency ShutDown Without Depressuriz	Process Emergency ShutDown With Depressurizing	Train shut down Without depressurizing	Equipment shut down	Corrosion Inhibitor Package	Golkhari Inlet Gas Pipeline Shut Down Valve	Binak Inlet Gas Pipeline Shut Down Valve	OUTLET GAS Compression Discharge Drum (V-2103)	Sump Pump	STOP METHANOL INJECTION PACKAGE		
							P&ID	-	-	-	-	BK-GCS-PEDCO-120-PR-PI-0018	BK-GCS-PEDCO-120-PR-PI-0003	BK-GCS-PEDCO-120-PR-PI-0002	BK-GCS-PEDCO-120-PR-PI-0012	BK-GCS-PEDCO-120-PR-PI-0017 (2	BK-GCS-PEDCO-120-PR-PI-0019		
							NOTE												
1		1A	Process Emergency ShutDown With Depressurizing	-		ESD 1A	1	A											
2		1	Push Button in CCR	-			2	A											
3		1	Nitrogen Header Pressure Low Low	BK-GCS-PEDCO-120-PR-PI-0016		PALL-2211	4	A											
4		1	Instrument Air Heade Pressure Low Low (2 out of 3 voting)	BK-GCS-PEDCO-120-PR-PI-0015(2/2)		PALL-2201 A/B/C	5	A											
5		1	Network Power Failure				6	A											
6		1	PCS Failure				7	A											
7		1	High high liquid level inlet K.O drum	BK-GCS-PEDCO-120-PR-PI-0005		LAHH-2117	8	A											
8		1	Low Low Pressure Transfer Pipeline (Gas)	BK-GCS-PEDCO-120-PR-PI-0013(1/3)			9	A											
9		1	Flare K.O. Drum Level High High (2 out of 3 voting)	BK-GCS-PEDCO-120-PR-PI-0020(2/3)		LIA2252A/B/C	10	A											
10		1	High high pressure (pipeline at inlet of sluge catcher drum)	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		PIAHH-2111		A											
11		1	High high liquid level Slug Catcher Drum	BK-GCS-PEDCO-120-PR-PI-0004(1/3)		LA-2112	12	A											
12		1	High High liquid level in Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012		LAHH-2142	13	A											
13		1	DC charger failure					A											
14		1	Flare Ignition Failure	BK-GCS-PEDCO-120-PR-PI-0020(3/3)		IG-2211	14	A											
15		1	**Process Emergency ShutDown Without Depressurizing**				15	A	A(6)	A	A	S/T	C	C	C	S	S/T		
16							17												
17							16												
18							17												
19							18												
20							19												
21							20												
22							21												
23							22												
24							23												
25							24												
26							25												
27							26												
28							27												
29							28												
30							29												
31							30												
32							31												
33							32												
34							33												
35							34												
36							35												
37							36												
38							37												
39							38												
40							39												
41							40												
42							41												
43							42												
44							43												
45							44												
46							45												
47							46												

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه پتروایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 2A- Train shut down With depressurizing(train A)

EFFECT

TAG No.	Equipment / Description	P&ID	NOTE
ESD 2A	Train shut down With depressurizing (train A)	-	
ESD2	Train shut down Without depressurizing (train A)	-	
BDV-2134A	2Nd Stage Gas Compressor Suction Drum Blow Do	BK-GCS-PEDCO-120-PR-PI-0009(1/3)	
BDV-2132A	2nd Satge Gas Compression Air Cooler Blow Down Valve(A	BK-GCS-PEDCO-120-PR-PI-0011	

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.	No	ESD 2A	ESD2	BDV-2134A	BDV-2132A
1		1A	Process Emergency ShutDown With Depressurizing	-		ESD 1A	1	A			
2		2	Train shut down Without depressurizing (with time delay)	-	(Note 6)	ESD 2	2	A			
3		2A	Shut Down Push Button in CCR For Each Dedicated Train Of GCS	-		ESDR	3	A			
4		2A	Confirm fire in process area				7	A			
5		2A	Compressor failure signal form compressor package. (Depressurized Shutdown).	-			5	A			
6		2A	High high Gas Pressure 1ST Stage Gas Compression Suction Drum	BK-GCS-PEDCO-120-PR-PI-0006(1/3)		PDIA-2121A/B/C					
7		2A	High high Gas Pressure 2ND Stage Gas Compression Suction Drum	BK-GCS-PEDCO-120-PR-PI-0009(1/3)		PDIA-2131A/B/C					
8		2A	**Train A shutdown With Depressurizing**	-		ESD 2A	6		A	O	O
9							8				
10							9				
11							10				
12							11				
13							12				
14							13				
15							14				
16							15				
17							16				
18							17				
19							18				
20							19				
21							20				
22							21				
23							22				
24							23				
25							24				
26							25				
27							26				
28							27				
29							28				
30							29				
31							30				
32							31				
33							32				
34							33				
35							34				
36							35				
37							36				
38							37				
39							38				
40							39				
41							40				
42							41				
43							42				
44							43				
45							44				
46							45				
47							46				

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه نیروی ایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 2A- Train shut down With depressurizing(train B)

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.
1		1A	Process Emergency ShutDown With Depressurizing	-		ESD 1A
2		2	Train shut down Without depressurizing (with time delay)	-	(Note 6)	ESD 2
3		2A	Shut Down Push Button in CCR For Each Dedicated Train Of GCS	-		ESDR
7		2A	Confirm fire in process area			
6		2A	High high Gas Pressure 1ST Stage Gas Compression Suction Drum	BK-GCS-PEDCO-120-PR-PI-0006(1/3)		PDIA-2121A/B/C
7		2A	High high Gas Pressure 2ND Stage Gas Compression Suction Drum	BK-GCS-PEDCO-120-PR-PI-0009(1/3)		PDIA-2131A/B/C
8		2A	**Train A shutdown With Depressurizing**	-		ESD 2A

EFFECT

No	TAG No.	ESD 2A	ESD2	BDV-2134 B	BDV-2132 B	Equipment / Description	P&ID	NOTE
1	ESD 1A	A				Train shut down With depressurizing(train A)	-	
2	ESD 2	A				Train shut down Without depressurizing(train A)	-	
3	ESDR	A						
7		A						
6	PDIA-2121A/B/C							
7	PDIA-2131A/B/C							
8	ESD 2A		A	O	O			
9								
10								
11								
12								
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								

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه پتروایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 2A- Train shut down With depressurizing (Train C)

EFFECT

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.	No	ESD 2A	ESD2	BDV-2134 C	BDV-2132 C
							P&ID	-	-	BK-GCS-PEDCO-120-PR-PI-0009 (3/3)	BK-GCS-PEDCO-120-PR-PI-0011 (3/3)
							Equipment / Description	Train shut down With depressurizing (Train C)	Train shut down Without depressurizing (Train C)	2Nd Stage Gas Compressor Suction Drum Blow Dow	2nd Satge Gas Compression Air Cooler Blow Down Valve(
1		1A	Process Emergency ShutDown With Depressurizing	-		ESD 1A	1	A			
2		2	Train shut down Without depressurizing (with time delay)	-	(Note 6)	ESD 2	2	A			
3		2A	Shut Down Push Button in CCR For Each Dedicated Train Of GCS	-		ESDR	3	A			
7		2A	Confirm fire in process area				7	A			
6		2A	High high Gas Pressure 1ST Stage Gas Compression Suction Drum	BK-GCS-PEDCO-120-PR-PI-0006(3/3)		PDIA-2121A/B/C					
7		2A	High high Gas Pressure 2ND Stage Gas Compression Suction Drum	BK-GCS-PEDCO-120-PR-PI-0009 (3/3)		PDIA-2131A/B/C					
8		2A	**Train C shutdown With Depressurizing**	-		ESD 2A	6		A	O	O

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه نیروی ایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 2- Train shut down Without depressurizing (Train A)

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.
1		1	Process Emergency ShutDown Without Depressurizing	-		ESD 1
2		2A	Train shut down With depressurizing(Train A)	-		ESD 2A
3		2	Compressor failure signal form compressor package (Pressurized Shutdown).	-		
4		2	High High level in 1st Stage Gas Compression Suction Drum Train A	BK-GCS-PEDCO-120-PR-PI-0006(1/3)		LIAHH-2122A
5		2	High High level in 2nd Stage Gas Compression Suction Drum Train A	BK-GCS-PEDCO-120-PR-PI-0009(1/3)		LIAHH-2132B
6		2	Low Low peressure in suction of 1st Stage Gas Compressor Train A	BK-GCS-PEDCO-120-PR-PI-0007(1/3)		LIALL-2122A
7		2	Low Low pressure in suction of 2nd Stage Gas Compressor Train A	BK-GCS-PEDCO-120-PR-PI-0010(1/3)		LIALL-2132B
8		2	High High Pressure in suction of 1ST Stage compressor Train A	BK-GCS-PEDCO-120-PR-PI-0007(1/3)		PIA-2122A
9		2	High High Pressure in discharge of 1st Stage compressor Train A	BK-GCS-PEDCO-120-PR-PI-0007(1/3)		PIA-2125A
10		2	High High Pressure in discharge of 2nd Stage compressor Train A	BK-GCS-PEDCO-120-PR-PI-0010(1/3)		PIA-2134B
11		2	High High Temprature in dischage of 1st Stage compressor Train A	BK-GCS-PEDCO-120-PR-PI-0007(1/3)		TIAHH-2124A
12		2	High High Temprature in dischage of 2nd Stage compressor train A	BK-GCS-PEDCO-120-PR-PI-0010(1/3)		TIAHH-2134B
13		2	Shut down push button in CCR for dedicated GCS Train A			ESDR
14		2	High High Temprature in dischage of 1st Stage gas compressor air cooler Train A	BK-GCS-PEDCO-120-PR-PI-0008(1/3)		TIAHH-2125A
15		2	High High Temprature in dischage of 2nd Stage gas compressor air cooler Train A	BK-GCS-PEDCO-120-PR-PI-0011(1/3)		TIAHH-2136A
16		2	**Train shut down Without depressurizing (Train A)**			ESD 2
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						

EFFECT

No	TAG No.	Equipment / Description	P&ID	NOTE
1	ESD 2	Train shut down Without depressurizing (Train A)	.	
2	ESD2A	Train shut down With depressurizing (Train A)	.	
3	XV-2121A	Inlet 1st Stage Compressor 1st Stage Gas Compression Suction	BK-GCS-PEDCO-120-PR-PI-0006(1/3	
4	XV-2133A	outlet On/Off Valve 2nd Stage Gas Compressor Air Cooler (Train	BK-GCS-PEDCO-120-PR-PI-0011(1/3	
5	C-2101A	1st stage gas compressor (Train A)	BK-GCS-PEDCO-120-PR-PI-000 7(1/3	
6	C-2102A	2nd stage gas compressor (Train A)	BK-GCS-PEDCO-120-PR-PI-0010(1/3	
7				
8				
9				
10				
11				
12				
13				
14				
15	A(6)	C	C	T	T
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				

NISOC

تگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه نیروگاهی ایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 2- Train shut down Without depressurizing (Train B)

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.
1		1	Process Emergency ShutDown Without Depressurizing	-		ESD 1
2		2A	Train shut down With depressurizing (Train B)	-		ESD 2A
3		2	Compressor failure signal form compressor package (Pressurized Shutdown).	-		
4		2	High High level in train A 1st Stage Gas Compression Suction Drum (Train B)	BK-GCS-PEDCO-120-PR-PI-0006(2/3)		LIAHH-2122A
5		2	High High level in train A 2nd Stage Gas Compression Suction Drum (Train B)	BK-GCS-PEDCO-120-PR-PI-0009(2/3)		LIAHH-2132B
6		2	Low Low peressure in suction of 1st Stage Gas Compressor Train B	BK-GCS-PEDCO-120-PR-PI-0007(2/3)		LIALL-2122A
7		2	Low Low pressure in suction of 2nd Stage Gas Compressor Train B	BK-GCS-PEDCO-120-PR-PI-0010(2/3)		LIALL-2132B
8		2	High High Pressure in suction of 1ST Stage compressor (Train B)	BK-GCS-PEDCO-120-PR-PI-0007(2/3)		PIA-2122A
9		2	High High Pressure in discharge of 1st Stage compressor (Train B)	BK-GCS-PEDCO-120-PR-PI-0007(2/3)		PIA-2125A
10		2	High High Pressure in discharge of 2nd Stage compressor (Train B)	BK-GCS-PEDCO-120-PR-PI-0010(2/3)		PIA-2134B
11		2	High High Temprature in dischage of 1st Stage compressor (Train B)	BK-GCS-PEDCO-120-PR-PI-0007(2/3)		TIAHH-2124A
12		2	High High Temprature in dischage of 2nd Stage compressor (Train B)	BK-GCS-PEDCO-120-PR-PI-0010(2/3)		TIAHH-2134B
13		2	Shut down push button in CCR for dedicated GCS (Train B)			ESDR
14		2	High High Temprature in dischage of 1st Stage gas compressor air cooler (Train B)	BK-GCS-PEDCO-120-PR-PI-0008(2/3)		TIAHH-2125A
15		2	High High Temprature in dischage of 2nd Stage gas compressor air cooler (Train B)	BK-GCS-PEDCO-120-PR-PI-0011(2/3)		TIAHH-2136A
16		2	**Train shut down Without depressurizing (Train B)**			ESD 2
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						

EFFECT

No	TAG No.	Equipment / Description	P&ID	NOTE
1	ESD 2	Train shut down Without depressurizing (Train B)	-	
2	ESD 3	Equipmen shutdown (Train B)	-	
3	XV-2121B	Inlet 1st Stage Compressor 1st Stage Gas Compression Suction	BK-GCS-PEDCO-120-PR-PI-0(	
4	XV-2133B	outlet On/Off Valve 2nd Stage Gas Compressor Air Cooler (Train	BK-GCS-PEDCO-120-PR-PI-0(	
5	C-2101B	1st stage gas compressor (Train B)	BK-GCS-PEDCO-120-PR-PI-0(	
6	C-2102B	2nd stage gas compressor (Train B)	BK-GCS-PEDCO-120-PR-PI-0(	
7				
8				
9				
10				
11				
12				
13				
14				
15				
16	A	C	C	T	T
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				

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه نیروی ایران

HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 2- Train shut down Without depressurizing (Train C)

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.
1		1	Process Emergency ShutDown Without Depressurizing	-		ESD 1
2		2A	Train shut down With depressurizing(Train C)	-		ESD 2A
3		2	Compressor failure signal form compressor package (Pressurized Shutdown).	-		
4		2	High High level in 1st Stage Gas Compression Suction Drum Train C	BK-GCS-PEDCO-120-PR-PI-0006(3/3)		LIAHH-2122A
5		2	High High level in 2nd Stage Gas Compression Suction Drum Train C	BK-GCS-PEDCO-120-PR-PI-0009(3/3)		LIAHH-2132B
6		2	Low Low peressure in suction of 1st Stage Gas Compressor Train C	BK-GCS-PEDCO-120-PR-PI-0007(3/3)		LIALL-2122A
7		2	Low Low pressure in suction of 2nd Stage Gas Compressor Train C	BK-GCS-PEDCO-120-PR-PI-0010(3/3)		LIALL-2132B
8		2	High High Pressure in suction of 1ST Stage compressor Train C	BK-GCS-PEDCO-120-PR-PI-0007(3/3)		PIA-2122A
9		2	High High Pressure in discharge of 1st Stage compressor Train C	BK-GCS-PEDCO-120-PR-PI-0007(3/3)		PIA-2125A
10		2	High High Pressure in discharge of 2nd Stage compressor Train C	BK-GCS-PEDCO-120-PR-PI-0010(3/3)		PIA-2134B
11		2	High High Tempraturе in dischage of 1st Stage compressor Train C	BK-GCS-PEDCO-120-PR-PI-0007(3/3)		TIAHH-2124A
12		2	High High Tempraturе in dischage of 2nd Stage compressor Train C	BK-GCS-PEDCO-120-PR-PI-0010(3/3)		TIAHH-2134B
13		2	Shut down push button in CCR for dedicated GCS Train C			ESDR
14		2	High High Tempraturе in dischage of 1st Stage gas compressor air cooler Train C	BK-GCS-PEDCO-120-PR-PI-0008(3/3)		TIAHH-2125A
15		2	High High Tempraturе in dischage of 2nd Stage gas compressor air cooler Train C	BK-GCS-PEDCO-120-PR-PI-0011(3/3)		TIAHH-2136A
16		2	**Train shut down Without depressurizing(Train C)**			ESD 2
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						
46						

EFFECT

No	ESD 2	ESD 3	XV-2121A	XV-2133C	C-2101C	C-2102C					
TAG No.											
Equipment / Description	Train shut down Without depressurizing(train A)	Equipmen shutdown(train A)	Inlet 1st Stage Compressor 1st Stage Gas Compression Suction	outlet On/Off Valve 2nd Stage Gas Compressor Air Cooler train A	1st stage gas compressor(Train A)	2nd stage gas compressor (Train A)					
P&ID	-	-	BK-GCS-PEDCO-120-PR-PI-0006(3/3)	BK-GCS-PEDCO-120-PR-PI-0011(1/3)	BK-GCS-PEDCO-120-PR-PI-0007(3/3)	BK-GCS-PEDCO-120-PR-PI-0010(3/3)					
NOTE											
No											
1	A										
2	A										
3	A										
4	A										
5	A										
6	A										
7	A										
8	A										
9	A										
10	A										
11	A										
12	A										
13	A										
14	A										
15		A	C	C	T	T					
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											

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شرکت توسعه نیروی ایران
HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 3-EQUIPMENT SHUT DOWN (TrainA)

CAUSE

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.
1		1	Process Emergency ShutDown Without Depressurizing	-		ESD 1
2		2	Train shut down Without depressurizing(Train A)	-		ESD 2
6		3	Low low liquid level in V-2104	BK-GCS-PEDCO-120-PR-PI-0004(1/3)		LA-2112
7		3	**Equipment Shut Down V-2104**			ESD 3
8		3	Low low liquid level in TK-2101	BK-GCS-PEDCO-120-PR-PI-0004(2/3)		LIALL-2115
9		3	**Equipment Shut Down P-2101**			ESD 3
10		3	Low low liquid Pressure in Liquid Outlet T-2102	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		PIALL-2114A/B
11		3	**Equipment Shut Down P-2101**			ESD 3
12		3	Low Low liquid level inlet K.O drum	BK-GCS-PEDCO-120-PR-PI-0005		LALL-2118
13		3	**Equipment Shut Down V-2105**			ESD 3
14		3	Low Low Liquid level at 1st Stage Gas Compression Suction Drum Train A	BK-GCS-PEDCO-120-PR-PI-0006(1/3)		LA-2122A
15		3	**Equipment Shut Down V-2101 A**			ESD 3
16		3	Low Low level in train A 2nd Stage Gas Compression Suction Drum Train A	BK-GCS-PEDCO-120-PR-PI-0009(1/3)		LALL-2132B
17		2	**Equipment Shut Down V-2101 A**			ESD 3
18		3	Low low liquid Pressure At Discharge P-2101 A/B	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		PIALL-2115
19		2	**Equipment Shut Down**			ESD 3
20		3	High motor vibration AE-2101A-M1	BK-GCS-PEDCO-120-PR-PI-0008(1/3)		VSHH-2121 A
21		3	**Equipment Shut Down AE-2101-M1**			ESD 3
22		3	High motor vibration AE-2101A-M2	BK-GCS-PEDCO-120-PR-PI-0008(1/3)		VSHH-2122A
23		3	**Equipment Shut Down AE-2101-M2**			ESD 3
24		3	High motor vibration AE-2102A-M1	BK-GCS-PEDCO-120-PR-PI-0011(1/3)		VSHH-2131 A
25		3	**Equipment Shut Down AE-2102-M1**			ESD 3
26		3	High motor vibration AE-2102-M2	BK-GCS-PEDCO-120-PR-PI-0011(1/3)		VSHH-2132 A
27		3	**Equipment Shut Down AE-2102-M2**			ESD 3
28		3	Low Low level in Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012		LALL2142
29		3	**Equipment Shut Down V-2103**			ESD 3
30		3	Low Low Liquid Level Of Lean Glaycol Storage Tank TK-2102	BK-GCS-PEDCO-120-PR-PI-0014		LALL-2161
31		3	**Equipment Shut Down P-2103**			ESD 3
32		3	Low Low Pressure Outlet of Air Compressor Package PK-C-2203 A/B	BK-GCS-PEDCO-120-PR-PI-0015(1/2)		PIALL-2202
33		3	**Equipment Shut Down P-2103**			
34		3	Low Low Liquid Level Close Drain Drum V-2202	BK-GCS-PEDCO-120-PR-PI-0017(2/2)		LALL-2222
35		3	**Equipment Shut Down P-2202**			ESD3
36		3	Low Low Liquid Leve in Methanol Injection Tank (TK-2208)	BK-GCS-PEDCO-120-PR-PI-0019		LIALL-2241
37		3	**Equipment Shut Down PK-2208**			ESD3
38		3	Low Low Liquid Level in Lp Flare K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0020(2/3)		LIALL-2253
39		3	**Equipment Shut Down P-2201A/B**			ESD3
40		3	Low low Liquid Level in Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022		LICAHH-2272
41		3	**Equipment Shut Down ESDV-2272**			ESD3
42		3	Low Low Liquid Level in Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022		LICALL-2272
43		3	**Equipment Shut Down XV-2271**			ESD3
44		3	Diesel Oil Drum V-2206	BK-GCS-PEDCO-120-PR-PI-0023		PIALL-2281
45		3	**Equipment Shut Down P-2206**			ESD3
46						

EFFECT

No	TAG No.	Equipment / Description	P&ID	NOTE
1	ESD 3	Equipment shut down	-	
2	ESDV-2111	V-2104 liquid outlet ESDV valve	BK-GCS-PEDCO-120-PR-PI-0004(1/3)	
3	ESD 3	Equipment shut down Train A	-	
4	P-2101	Slug Pump	BK-GCS-PEDCO-120-PR-PI-0004(3/3)	
5	ESD 3	Equipment shut down train		
6	P-2101	Slug Pump	BK-GCS-PEDCO-120-PR-PI-0004(3/3)	
7	ESD 3	Equipment shut down train		
8	ESDV-2113	V-2105 liquid outlet ESDV valve	BK-GCS-PEDCO-120-PR-PI-0005	
9	ESD 3	Equipment shut down		
10	XV-2122A	V-2101A liquid outlet ON/OFF valve	BK-GCS-PEDCO-120-PR-PI-0006(1/3)	
11	ESD 3	Equipment shut down		
12	XV-2131A	V-2102A liquid outlet ON/OFF valve	BK-GCS-PEDCO-120-PR-PI-0009(1/3)	
13	ESD 3			
14	ESDV-2112	ESDV Vale (at Discharge of P-2101)	BK-GCS-PEDCO-120-PR-PI-0004(3/3)	
15	ESD 3	Equipment shut down AE-2101-M1		
16	AE-2101A	1st stage gas air cooler trainA-Motor1	BK-GCS-PEDCO-120-PR-PI-0008(1/3)	
17	ESD 3	Equipment shut down AE-2101-M2		
18	AC-2101-M2	1st stage gas air cooler trainA-Motor2	BK-GCS-PEDCO-120-PR-PI-0008(1/3)	
19	ESD 3	Equipment shut down AE-2102-M1		
20	AC-2102-M1	2nd stage gas air cooler trainA-Motor1	BK-GCS-PEDCO-120-PR-PI-0011(1/3)	
21	ESD 3	Equipment shut down AE-2102-M1		
22	AC-2102-M2	2nd stage gas air cooler trainA-Motor2	BK-GCS-PEDCO-120-PR-PI-0011(1/3)	
23	ESD 3	Equipment shut down V-2103		
24	XV-2144	Liquid Outlet Gas Compessin Discharge Drum On/Off Valve	BK-GCS-PEDCO-120-PR-PI-0012	
25	ESD 3	Equipment shut down Glycol Transfer Pump		
26	P-2103 A/B	Glycol Transfer Pump	BK-GCS-PEDCO-120-PR-PI-0014	
27	ESD 3	Equipment shut down		
28	ESDV-2231	Gas Outlet Of PK-C-2203 A/B ESDV Valve (To Plant Air)	BK-GCS-PEDCO-120-PR-PI-0015(1/2)	
29	ESD 3	Equipment shut down P-2202A/B		
30	P-2202 A/B	Close Drain Drum Pump	BK-GCS-PEDCO-120-PR-PI-0017(2/2)	
31	ESD 3	Equipment shut down PK-2208		
32	PK-2208	Methanol Injection Package	BK-GCS-PEDCO-120-PR-PI-0019	
33	ESD 3	Equipment shut down		
34	P-2201 A/B	Lp Flare K.O.Drum Pump	BK-GCS-PEDCO-120-PR-PI-0020(2/3)	
35	ESD 3	Equipment shut down		
36	ESDV-2272	Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022	
37	ESD 3	Equipment shut down XV Valve		
38	XV-2271	Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022	
39	ESD 3	Equipment shut down P-2206		
40	P-2206	Diesel Pump	BK-GCS-PEDCO-120-PR-PI-0023	
41				
42				
43				
44				
45				
46				

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

NISOC

شرکت توسعه پتروایران — HIRGAN ENERGY

شماره پیمان: ۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 3-EQUIPMENT SHUT DOWN (Train B)

EFFECT

No	Rev.	Level	DESCRIPTION (CAUSE)	P & ID	Note	TAG No.	No	ESD 3	ESDV-2111	ESD 3	P-2101	ESD 3	P-2101	ESD 3	ESDV-2113	ESD 3	XV-2122A	ESD 3	XV-2131A	ESD 3	ESDV-2112	ESD 3	AE-2101A	ESD 3	AC-2101-M2	ESD 3	AC-2102-M1	ESD 3	AC-2102-M2	ESD 3	XV-2144	ESD 3	P-2103 A/B	ESD 3	ESDV-2231	ESD 3	P-2202 A/B	ESD 3	PK-2208	ESD 3	P-2201 A/B	ESD 3	ESDV-2272	ESD 3	XV-2271	ESD 3	P-2206
								Equipment shut down	V-2104 liquid outlet ESDV valve	Equipment shut down (Train B)	Slug Pump	Equipment shut down (Train B)	Slug Pump	Equipment shut down (Train B)	V-2105 liquid outlet ESDV valve	Equipment shut down (Train B)	V-2101A liquid outlet ON/OFF valve	Equipment shut down (Train B)	V-2102A liquid outlet ON/OFF valve		ESDV Vale (at Discharge of P-2101)	Equipment shut down AE-2101 B-M1	1st stage gas air cooler (Train B)-Motor1	Equipment shut down AE-2101 B-M2	1st stage gas air cooler (Train B)-Motor2	Equipment shut down AE-2102 B-M1	2nd stage gas air cooler (Train B) -Motor1	Equipment shut down AE-2102 B-M1	2nd stage gas air cooler (Train B)-Motor2	Equipment shut down V-2103	Liquid Outlet Gas Compessin Discharge Drum On/Off Valve	Equipment shut down Glycol Transfer Pump	Glycol Transfer Pump	Equipment shut down (Train B)	Gas Outlet Of PK-C-2203 A/B ESDV Valve (To Plant Air)	Equipment shut down P-2202A/B	Close Drain Drum Pump	Equipment shut down PK-2208	Methanol Injection Package	Equipment shut down	Lp Flare K.O. Drum Pump	Equipment shut down	Fuel Gas K.O. Drum	Equipment shut down XV Valve	Fuel Gas K.O. Drum	Equipment shut down P-2206	Diesel Pump
									BK-GCS-PEDCO-120-PR-PI-0004(1/3)		BK-GCS-PEDCO-120-PR-PI-0004(3/3)		BK-GCS-PEDCO-120-PR-PI-0004(3/3)		BK-GCS-PEDCO-120-PR-PI-0005		BK-GCS-PEDCO-120-PR-PI-0006(2/3)		BK-GCS-PEDCO-120-PR-PI-0009(2/3)		BK-GCS-PEDCO-120-PR-PI-0004(3/3)		BK-GCS-PEDCO-120-PR-PI-0008(2/3)		BK-GCS-PEDCO-120-PR-PI-0008(2/3)		BK-GCS-PEDCO-120-PR-PI-0011(2/3)		BK-GCS-PEDCO-120-PR-PI-0011 (2/3)		BK-GCS-PEDCO-120-PR-PI-0012		BK-GCS-PEDCO-120-PR-PI-0014		BK-GCS-PEDCO-120-PR-PI-0015(1/2)		BK-GCS-PEDCO-120-PR-PI-0017(2/2)		BK-GCS-PEDCO-120-PR-PI-0019		BK-GCS-PEDCO-120-PR-PI-0020(2/3)		BK-GCS-PEDCO-120-PR-PI-0022		BK-GCS-PEDCO-120-PR-PI-0022		BK-GCS-PEDCO-120-PR-PI-0023
								NOTE																																							
1		1	Process Emergency ShutDown Without Depressurizing	-		ESD 1	1	A																																							
2		2	Train shut down Without depressurizing(Train B)	-		ESD 2	1	A																																							
6		3	Low low liquid level in V-2104	BK-GCS-PEDCO-120-PR-PI-0004(1/3)		LA-2112	2	A																																							
7		3	**Equipment Shut Down V-2104**			ESD 3	3		C																																						
8		3	Low low liquid level in TK-2101	BK-GCS-PEDCO-120-PR-PI-0004(2/3)		LIALL-2115	5			A																																					
9		3	**Equipment Shut Down P-2101**			ESD 3	6				S																																				
10		3	Low low liquid Pressure in Liquid Outlet T-2102	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		PIALL-2114A/B	8					A																																			
11		3	**Equipment Shut Down P-2101**			ESD 3	9						S																																		
12		3	Low Low liquid level inlet K.O drum	BK-GCS-PEDCO-120-PR-PI-0005		LALL-2118	11							A																																	
13		3	**Equipment Shut Down V-2105**			ESD 3	12								C																																
14		3	Low Low Liquid level at 1st Stage Gas Compression Suction Drum (Train B)	BK-GCS-PEDCO-120-PR-PI-0006(2/3)		LA-2122A	14									A																															
15		3	**Equipment Shut Down V-2101 B**			ESD 3	15										C																														
16		3	Low Low level in train A 2nd Stage Gas Compression Suction Drum Train A	BK-GCS-PEDCO-120-PR-PI-0009(2/3)		LALL-2132B	16											A																													
17		2	**Equipment Shut Down V-2101 A**			ESD 3	17												C																												
18		3	Low low liquid Pressure At Discharge P-2101 A/B	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		PIALL-2115	18													A																												
19		2	**Equipment Shut Down**			ESD 3	19				S										C																										
20		3	High motor vibration AE-2101A-M1	BK-GCS-PEDCO-120-PR-PI-0008(2/3)		VSHH-2121 A	20															A																									
21		3	**Equipment Shut Down AE-2101-M1**			ESD 3	21																T																								
22		3	High motor vibration AE-2101 B-M2	BK-GCS-PEDCO-120-PR-PI-0008 (2/3)		VSHH-2122A	22																	A																							
23		3	**Equipment Shut Down AE-2101 B-M2**			ESD 3	23																		T																						
24		3	High motor vibration AE-2102A-M1	BK-GCS-PEDCO-120-PR-PI-0011(2/3)		VSHH-2131 A	24																			A																					
25		3	**Equipment Shut Down AE-2102 B-M1**			ESD 3	25																				T																				
26		3	High motor vibration AE-2102 B-M2	BK-GCS-PEDCO-120-PR-PI-0011(2/3)		VSHH-2132 A	26																					A																			
27		3	**Equipment Shut Down AE-2102 B-M2**			ESD 3	27																						T																		
28		3	Low Low level in Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012		LALL2142	28																							A																	
29		3	**Equipment Shut Down V-2103**			ESD 3	29																								C																
30		3	Low Low Liquid Level Of Lean Glaycol Storage Tank TK-2102	BK-GCS-PEDCO-120-PR-PI-0014		LALL-2161	30																									A															
31		3	**Equipment Shut Down P-2103**			ESD 3	31																										S														
32		3	Low Low Pressure Outlet of Air Compressor Package PK-C-2203 A/B	BK-GCS-PEDCO-120-PR-PI-0015(1/2)		PIALL-2202	32																											A													
33		3	**Equipment Shut Down P-2103**				33																												C												
34		3	Low Low Liquid Level Close Drain Drum V-2202	BK-GCS-PEDCO-120-PR-PI-0017(2/2)		LALL-2222	34																													A											
35		3	**Equipment Shut Down P-2202**			ESD3	35																														S										
36		3	Low Low Liquid Leve in Methanol Injection Tank (TK-2208)	BK-GCS-PEDCO-120-PR-PI-0019		LIALL-2241	36																															A									
37		3	**Equipment Shut Down PK-2208**			ESD3	37																																S								
38		3	Low Low Liquid Level in Lp Flare K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0020(2/3)		LIALL-2253	38																																	A							
39		3	**Equipment Shut Down P-2201A/B**			ESD3	39																																		S						
40		3	Low low Liquid Level in Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022		LICAHH-2272	40																																			A					
41		3	**Equipment Shut Down ESDV-2272**			ESD3	41																																				C				
42		3	Low Low Liquid Level in Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022		LICALL-2272	42																																					A			
43		3	**Equipment Shut Down XV-2271**			ESD3	43																																						C		
44		3	Diesel Oil Drum V-2206	BK-GCS-PEDCO-120-PR-PI-0023		PIALL-2281	44																																							A	
45		3	Equipment Shut Down P-2206			ESD3	45																																								S
46							46																																								

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

NISOC

شرکت توسعه نیروگاهی ایران — HIRGAN ENERGY

شماره پیمان:
۰۵۳ – ۰۷۳ – ۹۱۸۴

CAUSE & EFFECT DIAGRAM

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	CE	0001	D00

DESCRIPTION : ESD 3-EQUIPMENT SHUT DOWN (Train C)

CAUSE | EFFECT

No	Rev.	Level	DESCRIPTION	P & ID	Note	TAG No.	No	ESD 3	ESDV-2111	ESD 3	P-2101	ESD 3	P-2101	ESD 3	ESDV-2113	ESD 3	XV-2122A	ESD 3	XV-2131A	ESD 3	ESDV-2112	ESD 3	AE-2101A	ESD 3	AC-2101-M2	ESD 3	AC-2102-M1	ESD 3	AC-2102-M2	ESD 3	XV-2144	ESD 3	P-2103 A/B	ESD 3	ESDV-2231	ESD 3	P-2202 A/B	ESD 3	PK-2208	ESD 3	P-2201 A/B	ESD 3	ESDV-2272	ESD 3	XV-2271	ESD 3	P-2206
								Equipment shut down	V-2104 liquid outlet ESDV valve	Equipment shut down Train C	Slug Pump	Equipment shut down train	Slug Pump	Equipment shut down train	V-2105 liquid outlet ESDV valve	Equipment shut down	V-2101A liquid outlet ON/OFF valve	Equipment shut down	V-2102A liquid outlet ON/OFF valve	Equipment shut down	ESDV Vale (at Discharge of P-2101)	Equipment shut down AE-2101-M1	1st stage gas air cooler trainA-Motor1	Equipment shut down AE-2101-M2	1st stage gas air cooler trainA-Motor2	Equipment shut down AE-2102-M1	2nd stage gas air cooler trainA-Motor1	Equipment shut down AE-2102-M1	2nd stage gas air cooler trainA-Motor2	Equipment shut down V-2103	Liquid Outlet Gas Compessin Discharge Drum On/Off Valve	Equipment shut down Glycol Transfer Pump	Glycol Transfer Pump	Equipment shut down	Gas Outlet Of PK-C-2203 A/B ESDV Valve (To Plant Air)	Equipment shut down P-2202A/B	Close Drain Drum Pump	Equipment shut down PK-2208	Methanol Injection Package	Equipment shut down	Lp Flare K.O.Drum Pump	Equipment shut down	Fuel Gas K.O. Drum	Equipment shut down XV Valve	Fuel Gas K.O. Drum	Equipment shut down P-2206	Diesel Pump
								P&ID	-	BK-GCS-PEDCO-120-PR-PI-0004(1/3)	-	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		BK-GCS-PEDCO-120-PR-PI-0004(3/3)		BK-GCS-PEDCO-120-PR-PI-0005		BK-GCS-PEDCO-120-PR-PI-0006(3/3)		BK-GCS-PEDCO-120-PR-PI-0009(3/3)		BK-GCS-PEDCO-120-PR-PI-0004(3/3)		BK-GCS-PEDCO-120-PR-PI-0008(3/3)		BK-GCS-PEDCO-120-PR-PI-0008(3/3)		BK-GCS-PEDCO-120-PR-PI-0011(3/3)		BK-GCS-PEDCO-120-PR-PI-0011(3/3)		BK-GCS-PEDCO-120-PR-PI-0012		BK-GCS-PEDCO-120-PR-PI-0014		BK-GCS-PEDCO-120-PR-PI-0015(1/2)		BK-GCS-PEDCO-120-PR-PI-0017(2/2)		BK-GCS-PEDCO-120-PR-PI-0019		BK-GCS-PEDCO-120-PR-PI-0020(2/3)		BK-GCS-PEDCO-120-PR-PI-0022		BK-GCS-PEDCO-120-PR-PI-0022		BK-GCS-PEDCO-120-PR-PI-0023
								NOTE																																							
1		1	Process Emergency ShutDown Without Depressurizing	-		ESD 1	1	A																																							
2		2	Train shut down Without depressurizing(Train C)	-		ESD 2	1	A																																							
6		3	Low low liquid level in V-2104	BK-GCS-PEDCO-120-PR-PI-0004(1/3)		LA-2112	2	A																																							
7		3	**Equipment Shut Down V-2104**			ESD 3	3		C																																						
8		3	Low low liquid level in TK-2101	BK-GCS-PEDCO-120-PR-PI-0004(2/3)		LIALL-2115	5			A																																					
9		3	**Equipment Shut Down P-2101**			ESD 3	6				S																																				
10		3	Low low liquid Pressure in Liquid Outlet T-2102	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		PIALL-2114A/B	8					A																																			
11		3	**Equipment Shut Down P-2101**			ESD 3	9						S																																		
12		3	Low Low liquid level inlet K.O drum	BK-GCS-PEDCO-120-PR-PI-0005		LALL-2118	11							A																																	
13		3	**Equipment Shut Down V-2105**			ESD 3	12								C																																
14		3	Low Low Liquid level at 1st Stage Gas Compression Suction Drum Train C	BK-GCS-PEDCO-120-PR-PI-0006(3/3)		LA-2122A	14									A																															
15		3	**Equipment Shut Down V-2101 C**			ESD 3	15										C																														
16		3	Low Low level in 2nd Stage Gas Compression Suction Drum Train C	BK-GCS-PEDCO-120-PR-PI-0009(3/3)		LALL-2132B	16											A																													
17		2	**Equipment Shut Down V-2101 C**			ESD 3	17												C																												
18		3	Low low liquid Pressure At Discharge P-2101 A/B	BK-GCS-PEDCO-120-PR-PI-0004(3/3)		PIALL-2115	18													A																												
19		2	**Equipment Shut Down**			ESD 3	19						S								C																										
20		3	High motor vibration AE-2101C-M1	BK-GCS-PEDCO-120-PR-PI-0008(3/3)		VSHH-2121 A	20															A																									
21		3	**Equipment Shut Down AE-2101C-M1**			ESD 3	21																T																								
22		3	High motor vibration AE-2101C-M2	BK-GCS-PEDCO-120-PR-PI-0008(3/3)		VSHH-2122A	22																	A																							
23		3	**Equipment Shut Down AE-2101C-M2**			ESD 3	23																		T																						
24		3	High motor vibration AE-2102C-M1	BK-GCS-PEDCO-120-PR-PI-0011(3/3)		VSHH-2131 A	24																			A																					
25		3	**Equipment Shut Down AE-2102C-M1**			ESD 3	25																				T																				
26		3	High motor vibration AE-2102C-M2	BK-GCS-PEDCO-120-PR-PI-0011(3/3)		VSHH-2132 A	26																					A																			
27		3	**Equipment Shut Down AE-2102C-M2**			ESD 3	27																						T																		
28		3	Low Low level in Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012		LALL2142	28																							A																	
29		3	**Equipment Shut Down V-2103**			ESD 3	29																								C																
30		3	Low Low Liquid Level Of Lean Glaycol Storage Tank TK-2102	BK-GCS-PEDCO-120-PR-PI-0014		LALL-2161	30																									A															
31		3	**Equipment Shut Down P-2103**			ESD 3	31																										S														
32		3	Low Low Pressure Outlet of Air Compressor Package PK-C-2203 A/B	BK-GCS-PEDCO-120-PR-PI-0015(1/2)		PIALL-2202	32																											A													
33		3	**Equipment Shut Down P-2103**				33																												C												
34		3	Low Low Liquid Level Close Drain Drum V-2202	BK-GCS-PEDCO-120-PR-PI-0017(2/2)		LALL-2222	34																													A											
35		3	**Equipment Shut Down P-2202**			ESD3	35																														S										
36		3	Low Low Liquid Leve in Methanol Injection Tank (TK-2208)	BK-GCS-PEDCO-120-PR-PI-0019		LIALL-2241	36																															A									
37		3	**Equipment Shut Down PK-2208**			ESD3	37																																S								
38		3	Low Low Liquid Level in Lp Flare K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0020(2/3)		LIALL-2253	38																																	A							
39		3	**Equipment Shut Down P-2201A/B**			ESD3	39																																		S						
40		3	Low low Liquid Level in Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022		LICAHH-2272	40																																			A					
41		3	**Equipment Shut Down ESDV-2272**			ESD3	41																																				C				
42		3	Low Low Liquid Level in Fuel Gas K.O. Drum	BK-GCS-PEDCO-120-PR-PI-0022		LICALL-2272	42																																					A			
43		3	**Equipment Shut Down XV-2271**			ESD3	43																																						C		
44		3	Diesel Oil Drum V-2206	BK-GCS-PEDCO-120-PR-PI-0023		PIALL-2281	44																																							A	
45		3	**Equipment Shut Down P-2206**			ESD3	45																																								S
46							46																																								