



آموزش مقدماتی پالایشگاه فازهای ۱۵ و ۱۶ پارس جنوبی



SEPANIR



نیشنل
قرارگاه سازندگی خا



شرکت مهندسی نیروی نفت و گاز سپانیر
SEPANIR Oil & Gas Energy Eng. Co. [IASI]



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نیشنال
قرارگاه سازندگی خاباز



شرکت مهندسی نیروی نفت و گاز سپانیر
SEPANIR Oil & Gas Energy Eng. Co. [AS]



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case study

Claus

Claus

Hot gas bypass

TGUC

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نیسا
قرارگاه سازندگی خابلقا



شرکت مهندسی نیروی نفت و گاز سپانیر
SEPANIR Oil & Gas Energy Eng. Co. (SOG)



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(Hydro)

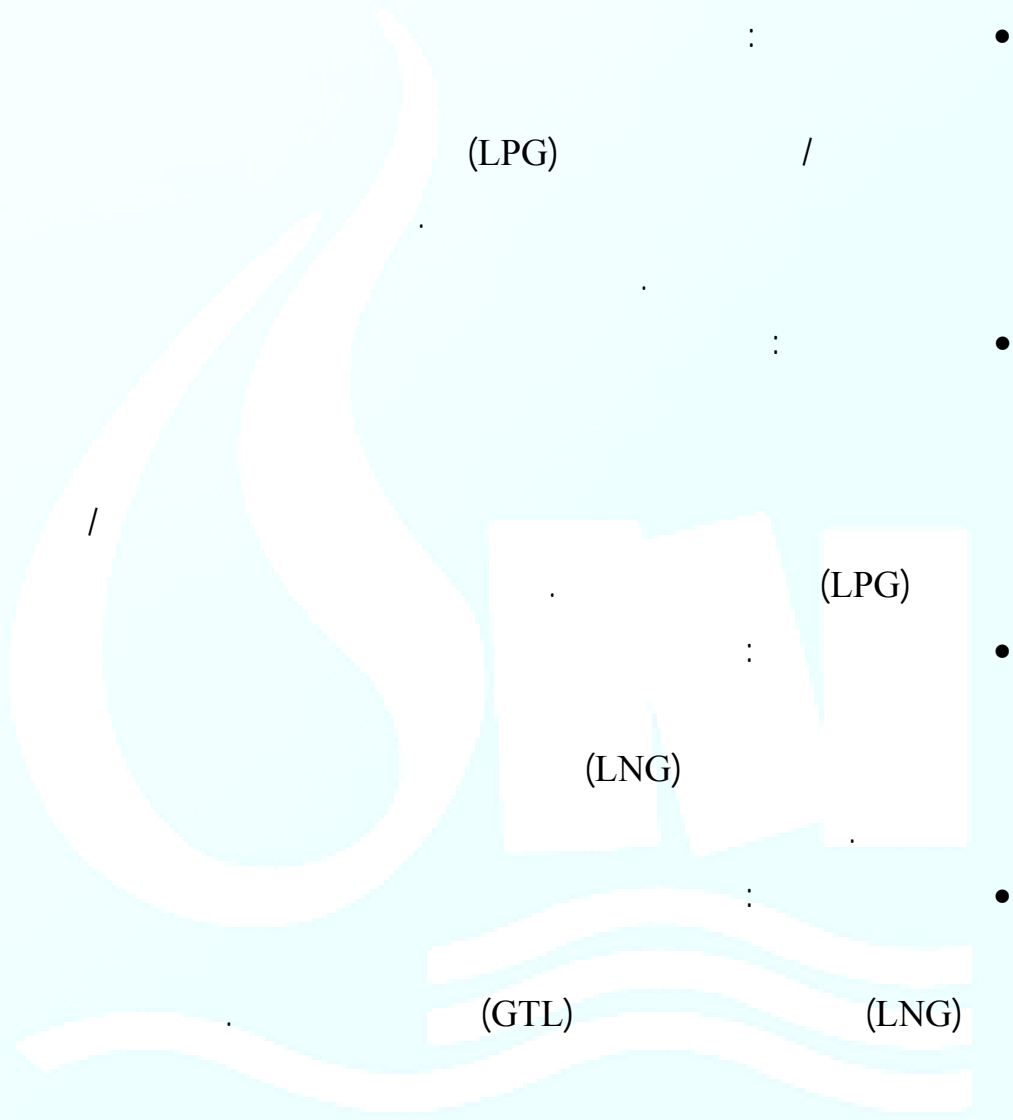
(Utility)

MPCC

(MEG)

(LPG)

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SEGANIR

(Reception facility)



(Gas Treating)

MDEA

H_2S CO_2

H_2S CO_2

Train

/ mol ppm

% Train

(Separation Section)

(Absorption Section)

CO_2 H_2S

(Thermal Regeneration)



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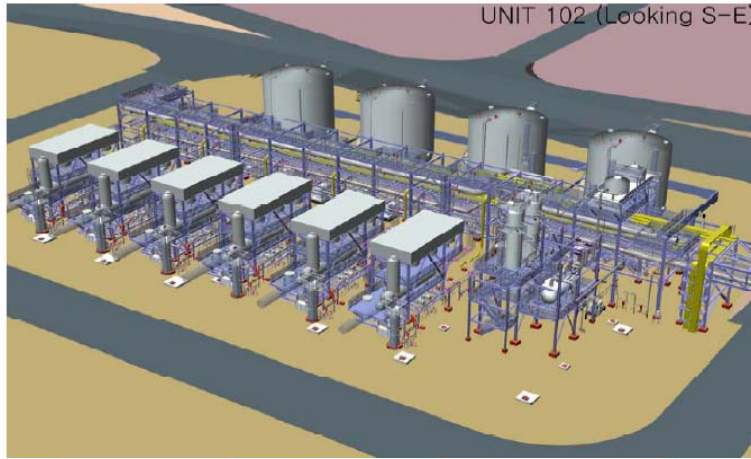


(MEG Regeneration)

:

Package

()



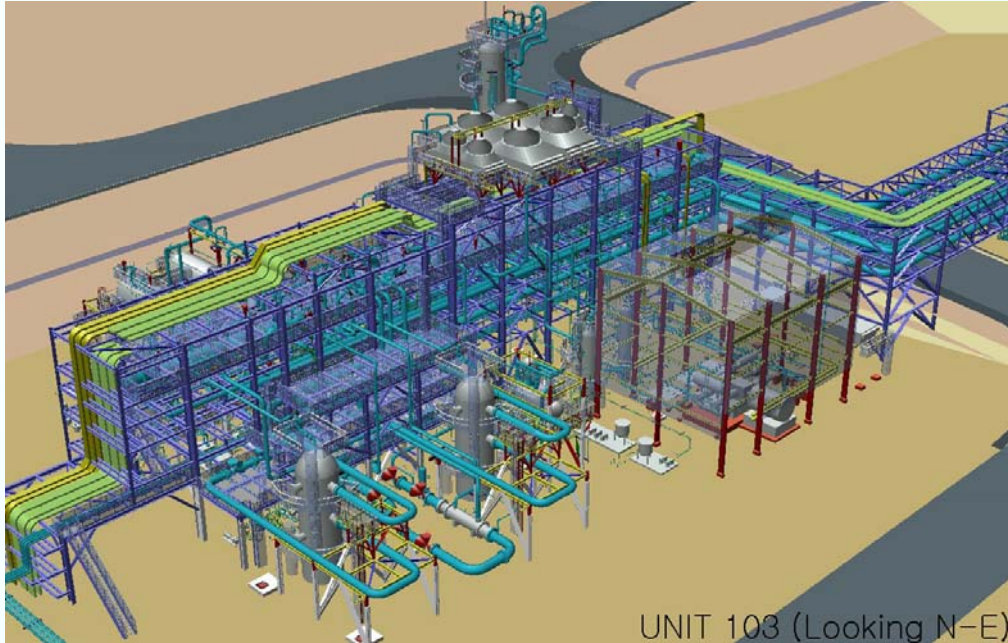
(Condensate Stabilizer)

:

(Condensate)

Glycolated water

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UNIT 103 (Looking N-E)

(Dehydration & Mercury guard)

Wet gas/treated gas

()

C

Wet gas chiller 104-E-102

exchanger 104-E-101

Dryer

C

(Ethane Recovery)

Train

(sale gas)



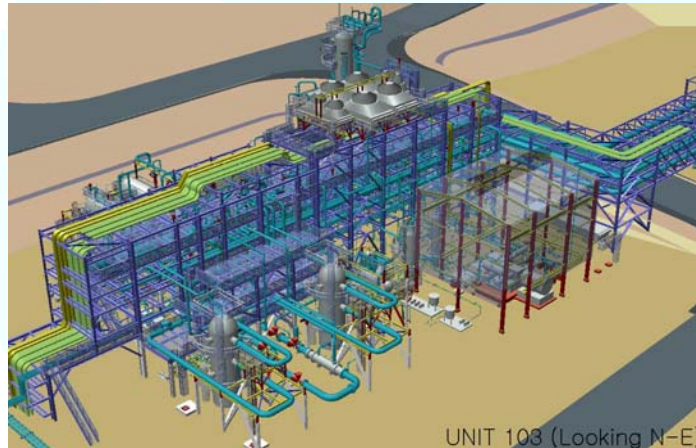
(NGL)

(Export gas compressor)

:

Tie – in

Tie in bar



(Depropaniser)

:

/ barg

/ bar

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(Sulphur recovery unit)

:

(line Sea)

(reception facilities)

H_2S

H_2S

SO_2 H_2S

H_2S

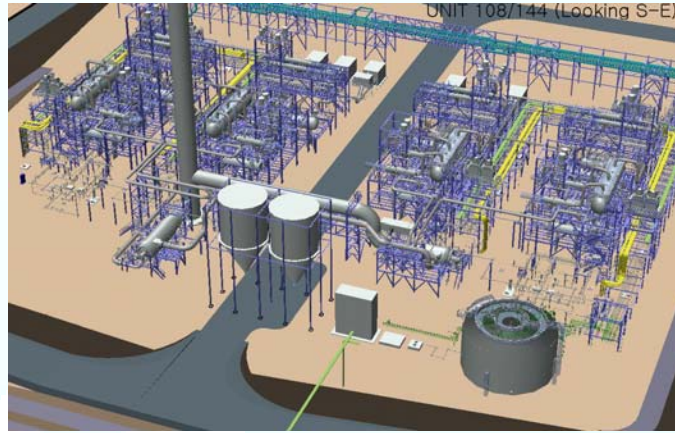
Train

HC, H_2S, CO_2

Train

(Stack)

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(Sour water stripper)

Sour components from sour)

Train

(water

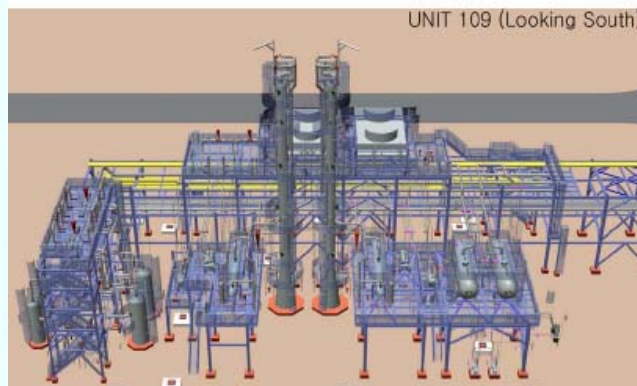
t/h

t/h

t/h

t/h

MEG, H₂O, H₂S





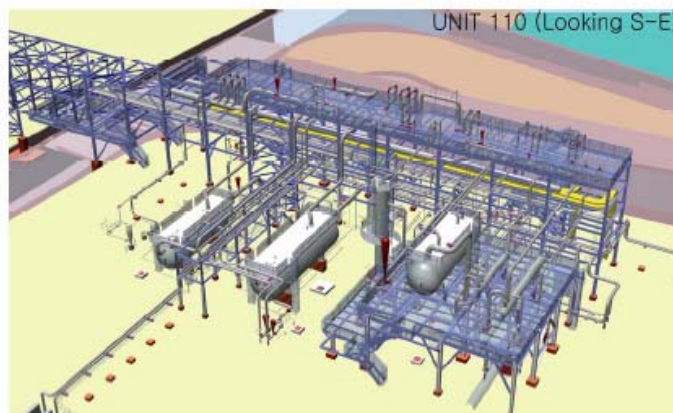
(Back-up stabilization)

:

(flare)

Off- gas

MMSCFD



(Propane gas refrigeration)

:

Train

/ bar

C

train

stand by

stand by



(Caustic regeneration)

:

Sulfurex





(Propane treatment and drying)

:

COS RSH

(NaOH)



(Butane treatment and drying)

:

:

Water recirculation sand filter Settler Extractor

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(Ethane treatment and drying)

:

Train

%

Train

t/h

C

/ barg

CO₂

(MDEA)

(Power generation)

:

120-GT-101 A/B/C/D(3+1 STAND BY)

SEPANIR

B A

HP FUEL GAS

D C



Pre Start Up

EDG

IGAT

brg

C



(Steam generation)

C brg

HP STEAM

•

C / brg

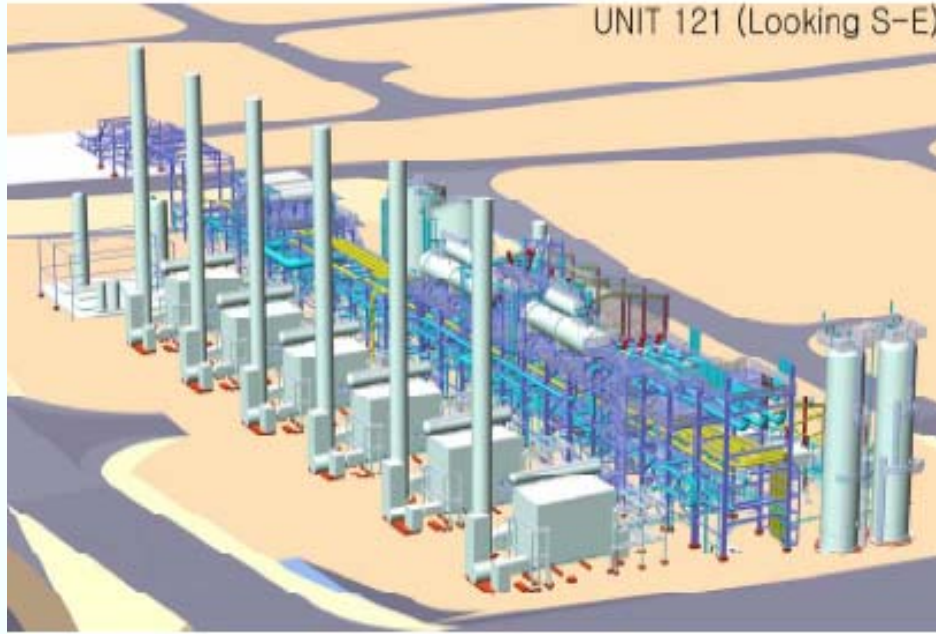
LP STEAM

•

t/h

Stand by

Water drum Steam drum



(Fuel gas) :

:

(bar)

(bar)

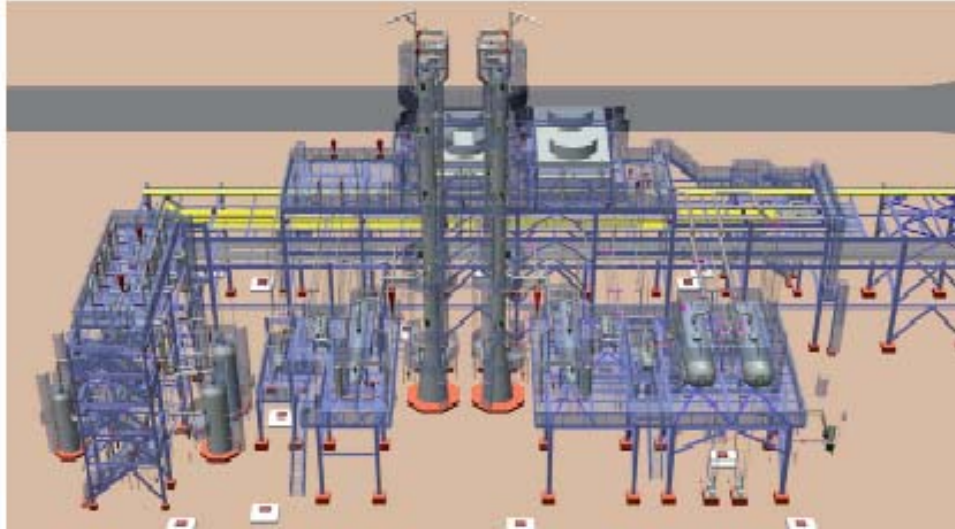
HPFG

LOB

LPFG

FG

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(Instrument air and service)

123-U- 101-A/B/C

123-U- 102-A/B/C

.123-D- 101-A/B/C

Nm³

Nm³ /hr

/hr

123-U- 102-A/B/C



(Nitrogen plant)

:

:

Shut down

sump drums

Sealing

Sea Water :

Utility

out site

outside insite

utility

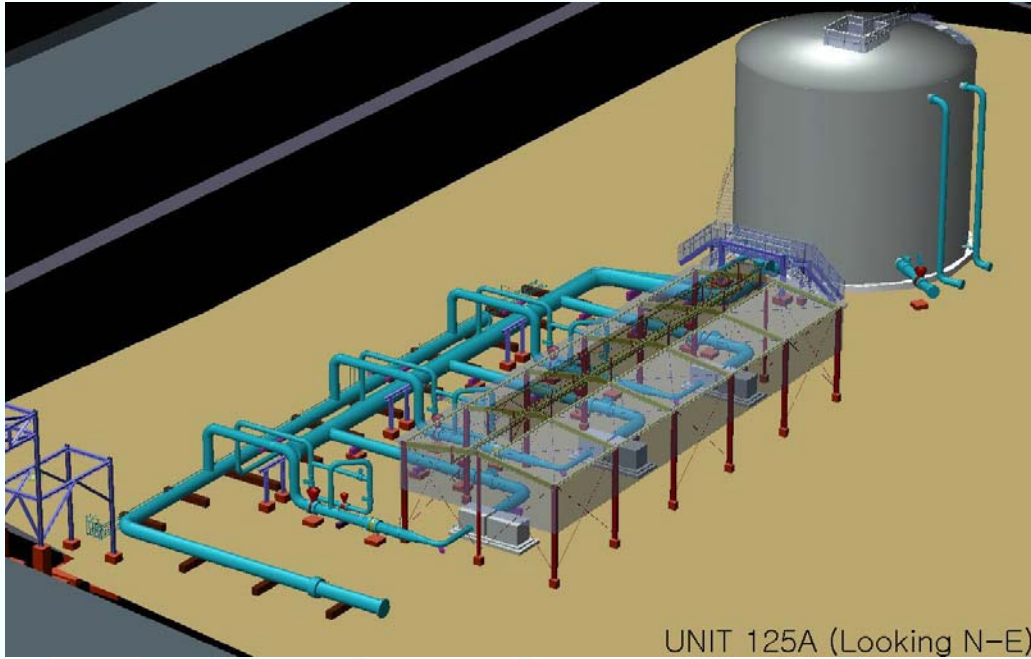
125-p-102-

m³

insite

A/B/C

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UNIT 125A (Looking N-E)

(Sea Water Desalination)

:

ejector

LP

shell & tube

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(Polishing water) :

High quality water for turbine washing)

((unit 120 , 106)

mixed bed exchanger

bed

mixed bed

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(Potable water)

eyewash

buffer tank

potable

(Water Effluent disposal)

Sanitary water

Chemical water

Oily water





(Fire water)

:

Line

Line

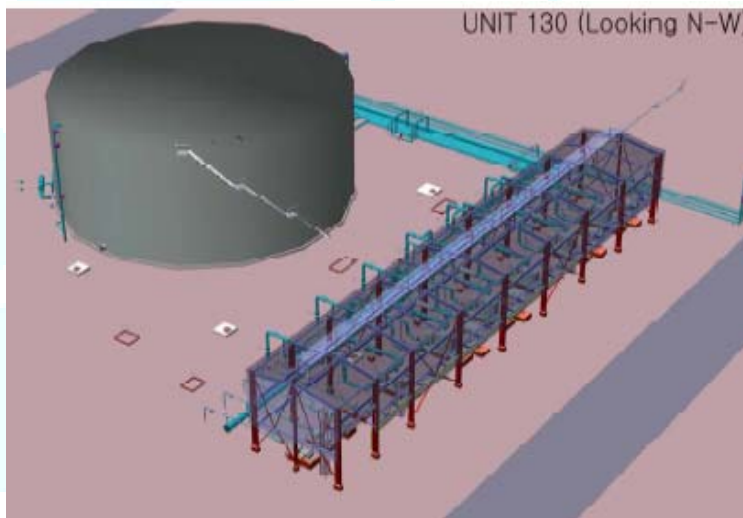
jockey

Lower section

Upper section

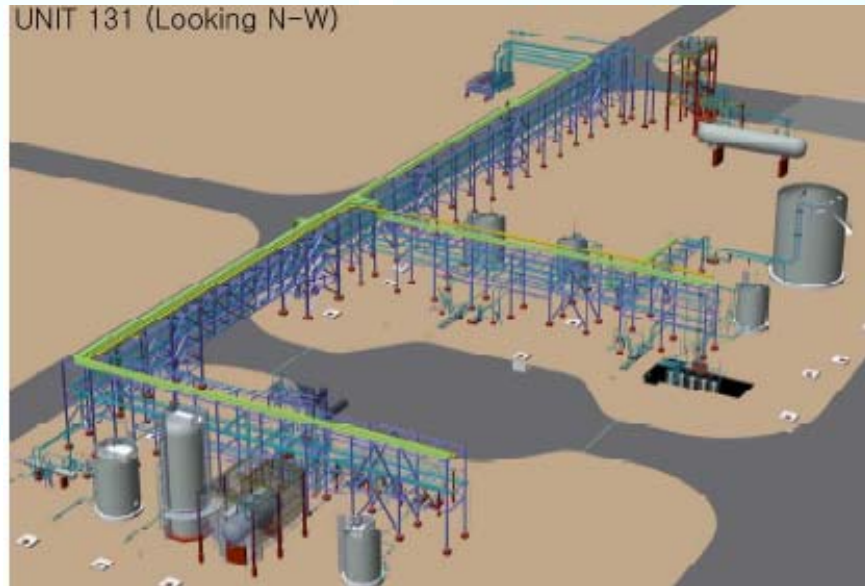
condensate

OSBL



(Diesel oil)

:



Cooling water :

...

:

mechanical seals bearing

.potable

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(Flare) :

flare

() MP LP HP

LLP

- Flare knocked out drum (a)
- Piping between the drums & flare (b)
- Stacks (c)



(Drain) :

burn pit off spec.

drain

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Burn Pit :

Off spec.

outside insite

(Condensate storage tanks)

D/C/B/A

(floating roof)

m

(stand by

(Off Spec.)

m

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(Fresh propane storage)

Make up

Make up

Utility

MEG, DEA, Caustic7%,Methanol, Caustic40%, MDEA

DSO

Drain

Sump Drum

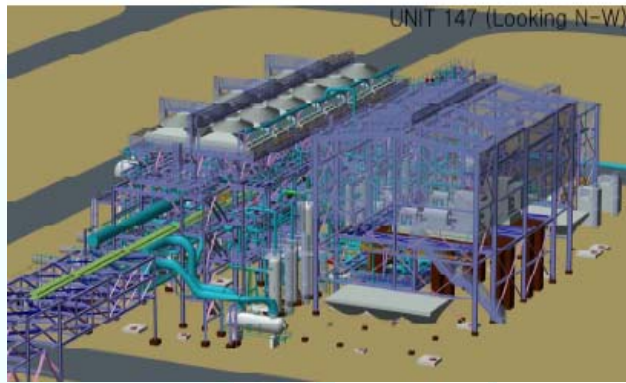
MDEA, MEG, DEA, DSO, Methanol



Propane storage and)

(export / refrigeration

Suction Drum



(Butane storage and export / refrigeration)

C

/ barg

C

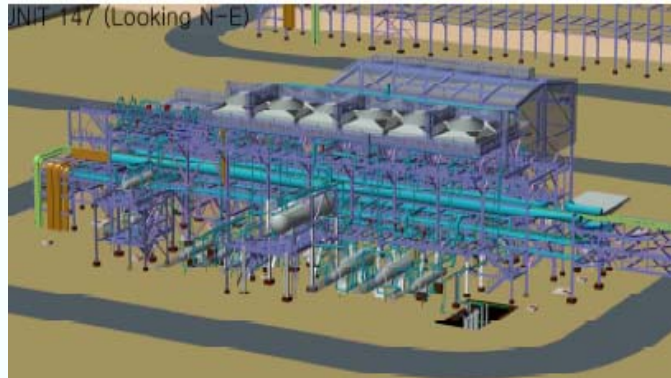
Kettle Type

/ barg

mbar

m³

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(Propane loading facilities)

:

(Butane loading facilities)

:

(Launching Scraper trap) PIG

:

IGAT4

PIG Receiver PIG Launcher

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()

Relief system

•

Fire & Gas System

•

Shut down system plant

•

Ultimate safety system

•

HIPPS

•

Relief system •

Case Study

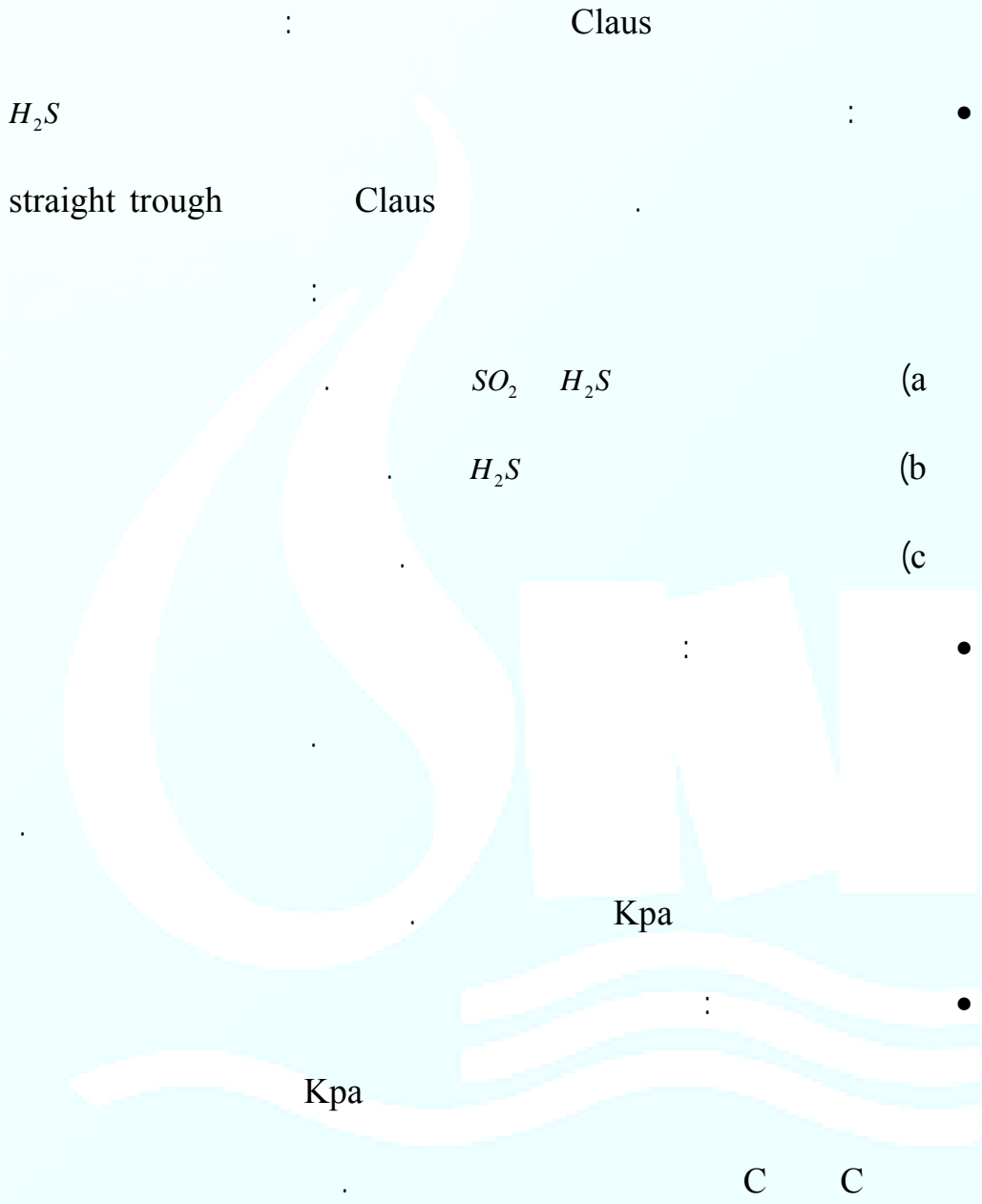
Cluas

SEPANIR
:Cluas
Cluas

H₂S

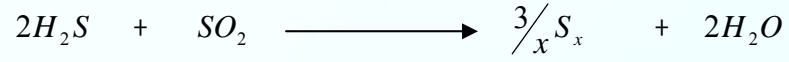


:Claus



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(Split flow)



straight trough

C

H_2S

Claus

(CS_2 COS)

Hot gas bypass (a)

Direct fire method (b)

Indirect reheat method (c)

Hot gas bypass (d)

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:

Claus

(CS₂)

(COS)

)

C

(

)

(

(

)

(

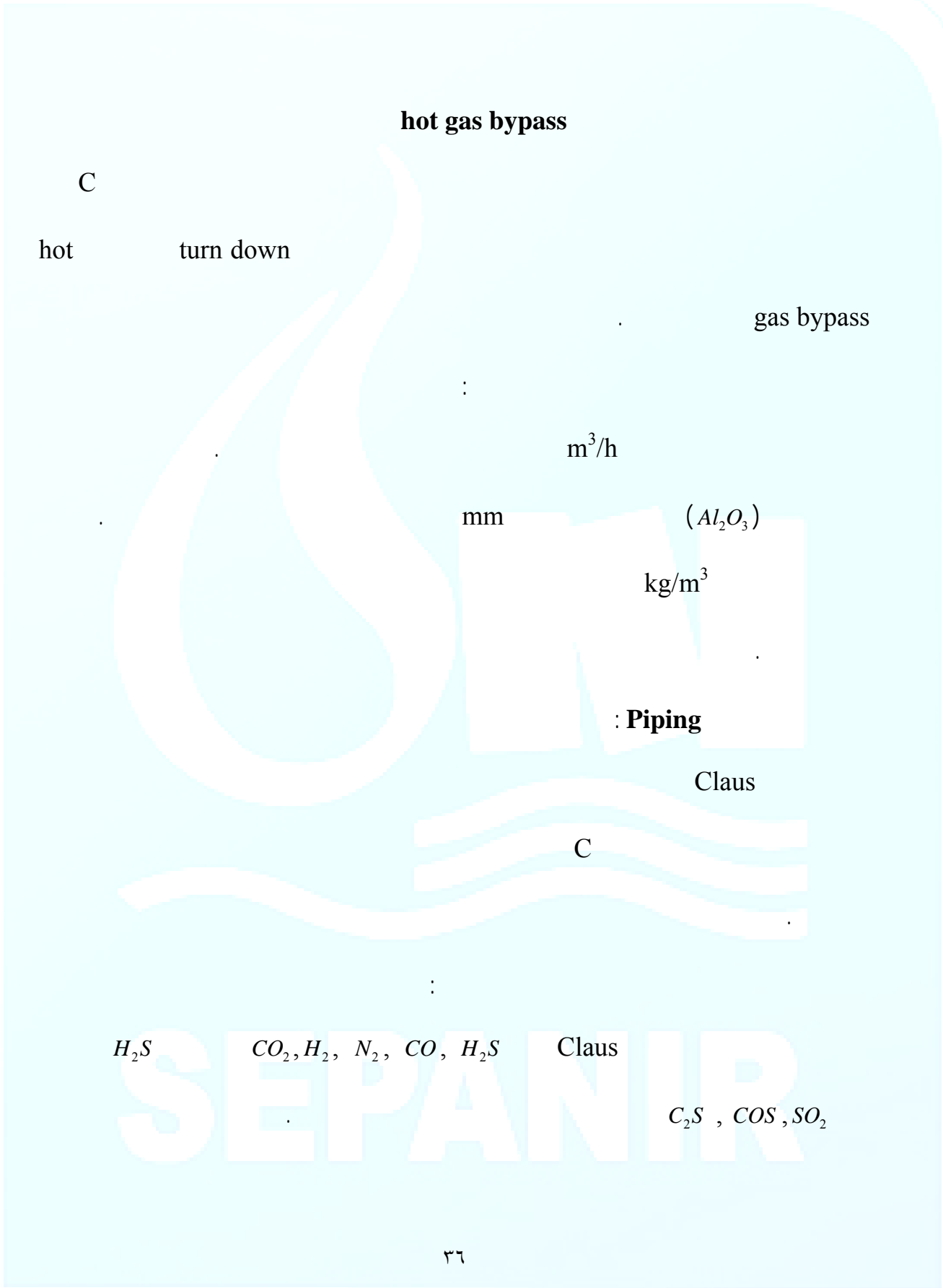
)

C

kettle

Kpa

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: Burning

SO_2 Claus () H_2S

C

: TGUC

TGUC

ClinSulf

CBN

dry-bed sub dew points

Sulfreen

MCRC

Claus

: SO_2

Claus

: H_2S

H_2S

TGCU

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Claus Tail Gas Clean Up Processes

Claus Tail Gas Cleanup Processes

- Extend Claus Reaction on Solid Bed (sub-dew-point)
 - CBA (Amoco/Pritchard/Orloff)
 - Clinsulf SDP (Linde AG)
 - MCRC (Delta Hudson)
 - Sulfreen (Lurgi Bamag / SNEA(F))
- Extend Claus Reaction in Liquid Phase Catalyst (sub-dewpoint)
 - Clauspol 300 (IFP)
- Direct Oxidation to Sulfur
 - Superclaus 99 (Stork Comprimo)
- Oxidize to SO_2 , Absorb and Recycle to Claus
 - Chiyoda Thoroughbred (CT121)
 - Elisorb (Elkem Technology)
 - Wellman-Lord (Lurgi Bamag)
- Reduce to H_2S , Absorb and Recycle to Claus
 - ARCO (ARCO/Pritchard)
 - BSR/MDEA (Parsons/UPO)
 - Clintox (Linde AG)
 - Exxon
 - HCR (Nuovo IGI)
 - Resulf (TPA)
 - SCOT (Shell)
- Reduce to H_2S and React/Oxidize to Sulfur
 - BSR/Selectox (Parsons/UOP)
 - MODOP (Mobil Oil)
 - Superclaus 99.5 (Stork Comprimo)

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