



CURRICULUM VITAE-  
Puntanata S Siagian  
Senior Process Safety/Loss Prevention Engineer

### CAREER SUMMARY

Lead/Senior Process Safety Engineer with more than 15 years' experience in safety studies, loss prevention engineering at onshore and offshore EPCC (Engineering Procurement Construction and Commissioning) Project.

Key experience on both onshore and offshore EPCC Project as follows;

### OVERALL PROJECT EXPERIENCE

- Lead process safety engineer for RDMP Balikpapan Refinery Project.
- Process Safety/Loss Prevention engineer with more than 14 -year core EPC experience with PT. Rekayasa Industri in Indonesia , overseas (Malaysia & Singapore) and as end user (PT.Pertamina Hulu Rokan/Ex Chevron Pacific Indonesia).
- Have experience more than 14 years in safety studies, loss prevention engineering at onshore and offshore EPCC (Engineering Procurement Construction and Commissioning) Project.
- Loss prevention, process hazard analysis/safety studies in Oil & Gas Onshore & Offshore, Petrochemicals, power plant and fertilizer.
- Project experience with fluids H<sub>2</sub>S & CO<sub>2</sub> rich contents
- Project experience with major clients which includes Petronas, CNOOC, ORICA and Pertamina.
- Hands on the study Quantitative Risk assessment for Offshore platform
- Loss Prevention & Safety study expertise - Active Fire Fighting Philosophy, Fire and Gas Philosophy ,ESD Philosophy, Passive fire protection, , Fire Water Demand Calculation, Fire water network steady state hydraulics , Transient study Fire Water Network (Review), Hazardous Area , Escape/Evacuation Route , Cause and Effect for Fire and Gas System., Material requisition, Data Sheet, TBE for Fire Fighting equipment (Fire Water system, Foam System, Total flooding and cleanagent system).
- Familiar with design and safety study for offshore platform, starting from basic design, hydraulic calculation, hazardous area classification, escape route, FERA, workshop study, QRA, etc.
- QRA, Fire and Explosion Assessment, Fire and Gas Mapping study, Flare Radiation, Flare Flame Out study, Air emission study, Cold venting dispersion study, Emergency and evacuation risk assessment, Plant siting and spacing study,and preparation of basic design document.
- Active member of workshop study HAZID, HAZOP, Alarm Management, HRA, 3D Model Review.
- Software expertise – Pipe Net 1.8, Flare Sim, DNV Phast.
- Actively involved in construction and commissioning for fire water system, foam system and also Total flooding and clean agent system.

### WORK EXPERIENCE

Dates	May 2024 – Current
Position held	Analyst Process Safety Assurance
Name and address of employer	Pertamina Hulu Rokan – Zona 1
Type of business or sector	Sub Holding Upstream
Role	Managing safety life cycle in PSAIMS Zona 1 Managing Process Hazard Analysis for 64 gathering station Managing and prepare BOW TIE (simplification and XP) Identification Major Accident Hazard and risk mitigation plan to reduce MAH in ALARP condition



Prepare SECE identification as per IOGP 544  
Prepare Fire Explosion Risk Assessment for Buffer Zone  
Prepare and manage SECE Performance Standard  
Review active and passive fire protection system in ongoing project  
Review facility siting in existing production facility and conduct FERA study to verify the safety distance.  
Prepare flare dispersion study for flare flame out in NSO, Jambi field and Pangkalan Susu field.  
Verification fire protection system in production facility as per Major Accident Hazard  
Managing PSAIMS Campaign and broadcasting 15 elements in around Zona 1.  
Tutor for upskilling PSAIMS knowledge in Zona 1

Dates

September 2023 – May 2024

Position held

Sr. Process Safety Engineer

Name and address of employer

AIBEL PTE LTD (Singapore)

Type of business or sector

EPCC for FPSO, FPU

Role

Sakarya Project (2023- Onwards)

Prepare Fire Water Demand Calculation

Prepare Hazardous Area Classification

Prepare Hydraulic Calculation for Fire Water

Prepare Safety Sign and Escape route

Prepare Fire and Gas System Mapping

Prepare PID for Fire Water System



Dates	November 2022 – September 2023
Position held	Sr. Process Safety Engineer
Name and address of employer	PT. Pertamina Hulu Rokan (Ex Chevron Pacific)
Type of business or sector	Upstream Oil and Gas
Role	Technical advisor for PHR Technical Standard Revalidation Facility Siting Study (80 Gathering Station) Revalidation Quantitative Risk Assessment Revalidation Flare Radiation and Flame out Technical advisor for small and capital project
Dates	June 2009 – November 2022
Position held	Lead Process safety engineer
Name and address of employer	PT. Rekayasa Industri, Indonesia
Type of business or sector	Engineering, Procurement, Construction and Commissioning

#### PROJECT EXPERIENCE (Related to PT.Rekayasa Industri)

##### **Lead Process Safety Engineer- RDMP [ 2018- till date] Indonesia, Client- Pertamina [ Refinery Project]**

RDMP Project (( 5 billion USD Project) owned by PT Pertamina (Persero) located at Balikpapan, East Kalimantan. The objective of the RDMP Project (the Project) is to revamp the capacity at Balikpapan RU-V mainly in Crude Distillation Unit (CDU), Vacuum Distillation Units (VDU) and the Hydrocracker Unit (HCU).

The CDU capacity increase from 200KBD to 300KBPD and the HCU capacity increases from 55 to 60KBPD. In addition, new process units shall be added to produce high quality fuel products from residual fuel oil.

The refinery includes high H<sub>2</sub>S handling units listed as below:

- Unit 067 (Non RFCC Sour Water Stripping Unit), consist H<sub>2</sub>S with 5750 ppm (5% in the stream)
- Unit 319 (South acid Flare system), consist H<sub>2</sub>S with 107400 ppm (10,7% in the stream)
- Unit 325 (Spent caustic treatment, consist H<sub>2</sub>S with 1200 ppm (0,12 % in the stream)
- Amine Regeneration Unit 1, consists H<sub>2</sub>S with 290183 ppm (29% in the stream)
- Sulphur Recovery Unit, consists H<sub>2</sub>S with 870000 ppm (87% in the stream)

The refinery includes high CO<sub>2</sub> handling units listed as below:

- Amine Regeneration Unit 1, consists CO<sub>2</sub> with 2300 ppm (0,23 % in the stream)
- Saturated Off Gas Concentration, consist CO<sub>2</sub> with 10 ppm
- CO<sub>2</sub> Flooding System for Gas Turbine Generator, 50 % Concentration by volume in Engine room
- RFCC, consist of CO<sub>2</sub> with 580 ppm in fuel gas production side
- Flue gas from several Stacks such as Steam and Power Generation Stack (Gas Turbine, Boiler, HRSG) and from process area (RFCC, Fired Heater and etc).

As Lead Process Engineer have responsibility as follows:

- Review the calculation, design basis of fire water demand, fire proofing lay out, hazardous source list, PID, Line List of Fire Water
- Review and conduct Hydraulic calculation for underground Fire Water using Pipe Net 1.8
- Handle technical study as below:
  - Flare radiation and flame out study [ Review]
  - Fire Explosion Assessment [ Review]
  - Quantitative Risk Assessment [ Review]
  - Transient study Fire Water Network [ Review]
  - Cold vent dispersion analysis [Prepare]
  - Air dispersion/emission study [ Review]
  - Fire and gas mapping/reliability study [ Review]



- Escape route and evacuation route risk assessment [ Review]
- Plant siting and spacing study [Prepare]
- Participate in workshop study (as member):
  - HAZOP, HAZID, FHA, HRA and SIL Classification Study
  - Alarm Management Study
- Review lay out drawing as follows:
  - Fire Proofing
  - Fire and Gas Lay out
  - Evacuation Route and Safety Sign
  - Fire and safety equipment lay out
- Interfacing and communication with OWNER and PMC
- Managing Construction & commissioning activity for active fire protection system such as HCFM and Booster Fire Pump

#### 2018 to 2018 (QRA Study for Cinta Complex CNOOC SES LTD) [ Offshore Process Platform]

Cinta complex owned by CNOOC South East Sumatra LTD located at approximately 90 km from Jakarta Bay. Currently CNOOC South East Sumatra produce 32.000 Barrel per day of crude oil and produce approximately 1.56 million m3 of natural gas.

CNOOC SES Ltd. Operates 34 production fields ,78 active offshore facilities (58 production platform and 28 caissons). Crude oil is produced using Electric Submersible Pump (ESP) from 415 wells and processed on 6 process platforms and transported by a subsea pipeline to two storage facilities ,the Widuri Terminal and the CNOOC 114 Terminal.

Cinta complex was built in 1971, divided as 4 platforms. Cinta-B which consist of well head production, riser manifold and pipeline manifold. Cinta-C consist of well head production, crude oil processing system (production separator, flow splitter and Chemical Electric) , open-closed drain system, water producing system (floatation equipment).

The objective of the Quantitative Risk Assessment are :

- To perform evaluation for the causes and potential consequence of all the identified fire risks or hazards, the safety measures provided in preventing/detecting/mitigating/controlling the fire outcomes/consequences.
- To estimate the blast overpressure and thermal impact on the platform (process plant) equipment and buildings
- To perform relevant blast impact analysis in platforms area that may generate risk of loss of life due to the proximity of occupied buildings to potential source of fire risk or hazards.
- To compare the calculated acceptability of the risks levels againsts the CNOOC risk acceptance criteria and confirm if the results are in compliance with the criteria.
- Recommend, if applicable, practical and effective measures to ensure that the risk is As Low As Reasonably Practicable (ALARP)

Responsibility ;

- This QRA study assess the process hazards under loss of containment conditions for Cinta-B, Cinta-P and Cinta-P1 including occupational hazard (non-hydrocarbon risk).
- Handle technical study as below:
  - Fire Explosion Assessment [ Prepare]
  - Quantitative Risk Assessment [ Prepare]
  - Escape route and evacuation route risk assessment [ Prepare]
  - Plant siting and spacing study [Prepare]

#### 2017 to 2017 (QRA Study for Zelda Complex CNOOC SES LTD) [ Offshore Process Platform]

Zelda complex owned by CNOOC South East Sumatra LTD located at approximately 90 km from Jakarta Bay. Currently CNOOC South East Sumatra produce 32.000 Barrel per day of crude oil and produce approximately 1.56 million m3 of natural gas.

The objective of the Quantitative Risk Assessment are :



- To perform evaluation for the causes and potential consequence of all the identified fire risks or hazards, the safety measures provided in preventing/detecting/mitigating/controlling the fire outcomes/consequences.
- To estimate the blast overpressure and thermal impact on the platform (process plant) equipment and buildings
- To perform relevant blast impact analysis in platforms area that may generate risk of loss of life due to the proximity of occupied buildings to potential source of fire risk or hazards.
- To compare the calculated acceptability of the risks levels againsts the CNOOC risk acceptance criteria and confirm if the results are in compliance with the criteria.
- Recommend, if applicable, practical and effective measures to ensure that the risk is As Low As Reasonably Practicable (ALARP)

Responsibility ;

- This QRA study assess the process hazards under loss of containment conditions for Zelda-P and Zelda-PC including occupational hazard (non-hydrocarbon risk).
- Handle technical study as below:
  - Fire Explosion Assessment [ Prepare]
  - Quantitative Risk Assessment [ Prepare]
  - Escape route and evacuation route risk assessment [ Prepare]
  - Plant siting and spacing study [Prepare]

SAMUR Project-Malaysia-2012-2016- Client Petronas [ Fertilizer Plant]

SAMUR (Sabah Ammonia and Urea Fertilizer Plant) owned by PETRONAS Sdn Bhd SAMUR and located in Sipitang, approximately 180 km from Kota Kinabalu, Malaysia.

SAMUR Project is developing a fertiliser (urea) Plant produced from natural gas transported via the SSGP pipeline from the Kinabalu and Kebabangan cluster field's offshore Sabah.

The Plant is designed for a 20 years life span with the nameplate capacity of:

Ammonia Plant : 2,100 mtpd of anhydrous liquid ammonia

Urea Synthesis : 3,500 mtpd of urea melt

Granulated Urea: 3,850 mtpd of urea granules

As Process Safety Engineer have responsibility as follows:

- Prepare design basis of fire water demand, fire proofing lay out, hazardous source list, PID, Line List of Fire Water
- Prepare Hydraulic calculation for underground Fire Water network (steady state) using Pipe Net 1.8
- Handle technical study as below:
  - Flare radiation and flame out study [ Review]
  - Fire Explosion Assessment [ Review]
  - Quantitative Risk Assessment [ Review]
  - Fire and gas mapping/reliability study [ Review]
  - Escape route and evacuation route risk assessment [ Review]
  - Plant siting and spacing study [Prepare]
- Participate in workshop study (as member):
  - HAZOP, HAZID, FHA, HRA and SIL Classification Study
  - Alarm Management Study
- Prepare lay out drawing as follows:
  - Fire Proofing
  - Fire and Gas Lay out
  - Evacuation Route and Safety Sign
  - Fire and safety equipment lay out
- Interfacing and communication with OWNER and PMC
- Managing Construction & commissioning activity for active fire protection system such as Fixed Fire Water Pump, Deluge Valve, FM 200 and Fire and Gas System.
- Liaise with Local Authorities for Regulatory Compliance (BOMBA Malaysia)



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### Ulubelu Project-Indonesia-2011-2012- Power Plant Project -Client PLN Indonesia [ Power Plant]

Ulubelu Project is located in Ulubelu , approximately 80 km from Bandar Lampung, Sumatera, Indonesia. Ulubelu project is geothermal power plant project which owned by PT PLN which have capacity 2 x 55 MW. Steam from well head will transfer to Ulebelu power plant and generate 55 MW from each facility. This geothermal power plan, handling H2S in the steam which produced from well head, which consist around 450 ppm.

The power plant includes high CO2 handling units listed as below:

- CO2 Flooding System for Substation, 50 % Concentration by volume in Building

As Process Safety Engineer have responsibility as follows:

- Prepare design basis of fire water demand, hazardous source list, PID, Line List of Fire Water
- Prepare Hydraulic calculation for underground Fire Water network (steady state) using Pipe Net 1.8
- Participate in workshop study (as member) :
  - HAZOP, HAZID, FHA, HRA and SIL Classification Study
- Prepare lay out drawing as follows:
  - Fire Proofing
  - Fire and Gas Lay out
  - Evacuation Route and Safety Sign
  - Fire and safety equipment lay out
- Managing Construction & commissioning activity for active fire protection system such as Fixed Fire Water Pump, Deluge Valve, CO2 System and Fire and Gas System.

### DPPU Hasanuddin-Indonesia-2011-2011-Tankage-Client -PT Pertamina [ Tankage Project]

DPPU Hasanudin is located in Makassar, which owned by P.T Pertamina (Persero). DPPU hasanuddin project is developing Avtur Storage Tank which have capacity 10.000 liter per tank ( 2 tanks). Avtur stored at the tanks and flowing to the air craft trough hydrant and avtur pumps.

Responsible for :

As Process Safety Engineer have responsibility as follows:

- Prepare design basis of fire water demand, hazardous source list, PID, Line List of Fire Water
- Prepare Hydraulic calculation for underground Fire Water network (steady state) using Pipe Net 1.8
- Participate in workshop study (as member):
  - HAZOP, HAZID, FHA, HRA and SIL Classification Study
- Prepare lay out drawing as follows:
  - Fire Proofing
  - Fire and Gas Lay out
  - Evacuation Route and Safety Sign
  - Fire and safety equipment lay out
- Managing Construction & commissioning activity for active fire protection system such as Fixed Fire Water Pump, Deluge Valve, FM 200 and Fire and Gas System.

### ANP Orica Project-Indonesia-2009-2011-Ammonia Nitrat Prill-Client-ORICA [ Fertilizer Project]

ANP( Ammonia Nitrat Prill) Orica Project is located on Bontang, East Kalimantan , Indonesia, owned by Kaltim Nitrat Indonesia . ANP Project is developing 300.00 ton Ammonia Prill, Ammonia from PKT Bontang is flowing to ANP Project and is used to produce Ammonia Nitrat Prill Plant.

As Process Safety Engineer have responsibility as follows:

- Prepare design basis of fire water demand, hazardous source list, PID, Line List of Fire Water
- Prepare Hydraulic calculation for underground Fire Water network (steady state) using Pipe Net 1.8
- Participate in workshop study (as member):
  - HAZOP, HAZID, FHA, HRA and SIL Classification Study
- Review desktop study as below:
  - Fire Explosion Assessment [ Review]
- Prepare lay out drawing as follows:
  - Fire Proofing



- Fire and Gas Lay out
- Evacuation Route and Safety Sign
- Fire and safety equipment lay out
- Managing Construction & commissioning activity for active fire protection system such as Fixed Fire Water Pump, Deluge Valve, FM 200 and Fire and Gas System.

#### PERSONAL INFORMATION

Full Name	Puntanata S Siagian
Place and Date of Birth	Jakarta, September 9 <sup>th</sup> , 1986
Gender	Male
Nationality	Indonesian
Title / GPA	Bachelor Degree from University Indonesia / 3.27 (4.0)
Language	Indonesia, Malaysia and English

#### EDUCATION AND QUALIFICATION

B,Eng in Mechanical Engineering,University of Indonesia , with GPA 3.27 (Scale 4)

Toeic test result : 829 poin

#### ACHIEVEMENTS

Fifth National Rank in National Innovation Contest, Bandung Institute of Technology, 2007

#### ADDITIONAL INFORMATION

Well organized with good interpersonal skills and self-discipline. Uses time productively and motivate to achieve specific planning goals. Herewith, I declare the details stated to be true and complete.

I hereby declare that all statements stated above are true and complete to the best of my knowledge and belief and nothing has been concealed/distorted.

Jakarta, 9 August 2025

Puntanata S Siagian