



**29-31 AGUSTUS 2023**  
**YOGYAKARTA**

# DIGITALIZATION IN BANYU URIP PLANT OPERATIONS

Tania Irani

# From Analog to Digital



IKATAN AHLI FASILITAS PRODUKSI  
MINYAK DAN GAS BUMI INDONESIA

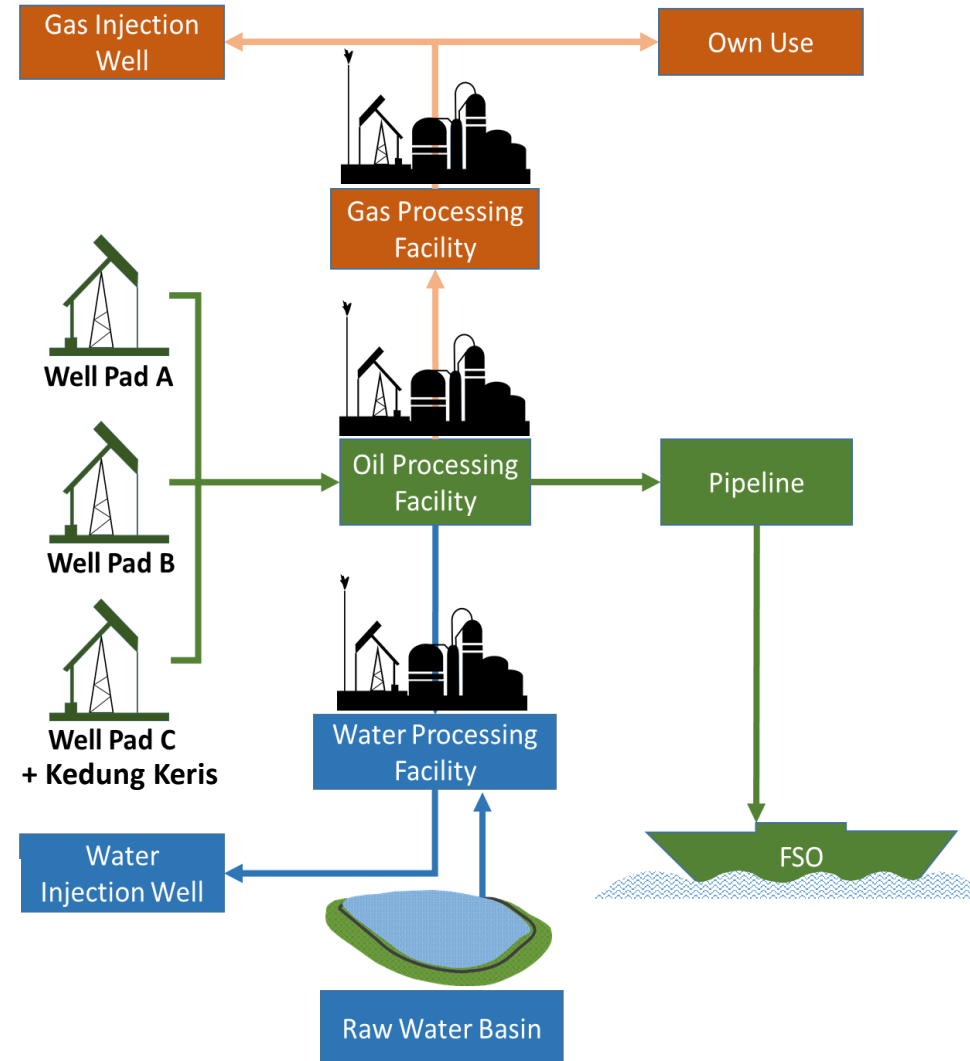


Journey of plant operation from the analog era to digitalization has been a transformative process. Unlocking unprecedented levels of safety, efficiency, and sustainability, ultimately shaping the future of the industry. **Digitalization has been helping Banyu Urip to contribute to ~25% of Indonesia Oil production**

# Banyu Urip Facilities



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# Banyu Urip Operation Digital Tools





# Safety Process Safety & Major Hazard Visibility



EMCL Scenario Management

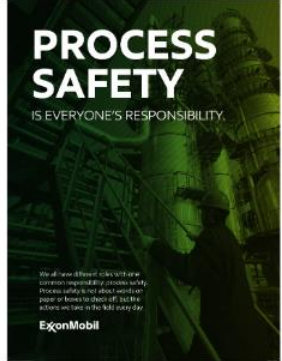
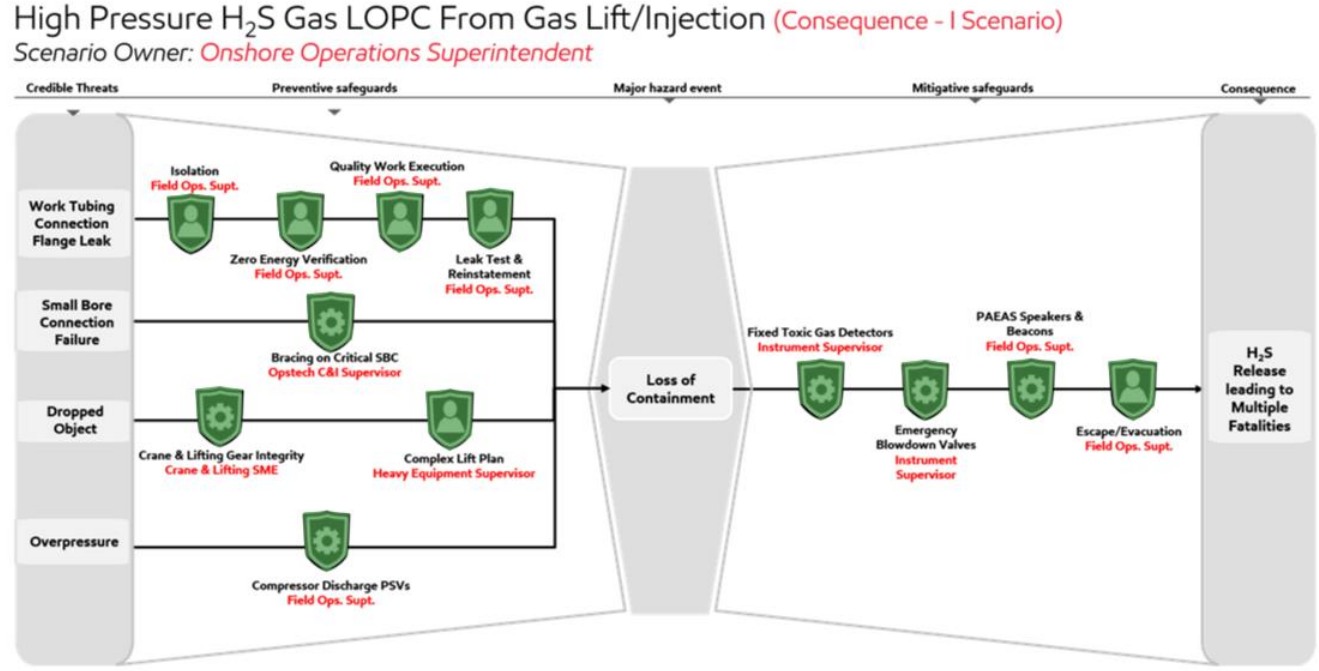
Scenario Bowtie | Submission History | PM Details | CSG Equipment Register | Update Safeguard Status | Go to PSRM SharePoint

Select Detail Scenario:  
C1 - High Pressure H2S Gas LOPC from Gas Lift/Injection

Safeguard Health

- Healthy (Meets Criteria)
- Healthy with Concern (Meets Criteria with additional concerns)
- Unhealthy (Does Not Meet Criteria)
- To be Assessed (New from ALARP Demonstration)

Safeguard Verification Checklist →





# Integrity Pipeline Monitoring



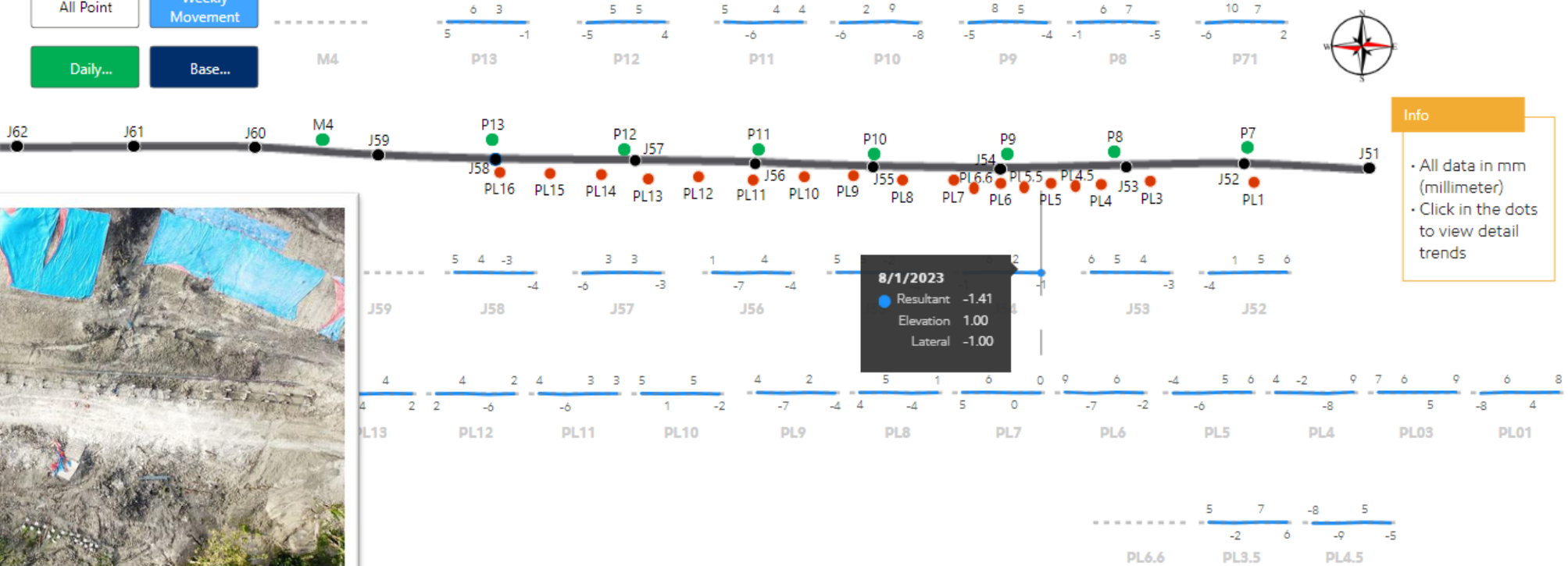
EMCL Digital | Operations Technical Surface | KK Pipeline

1/16/2023 | 8/1/2023

### Daily Movement

All Point | Weekly Movement

Daily... | Base...

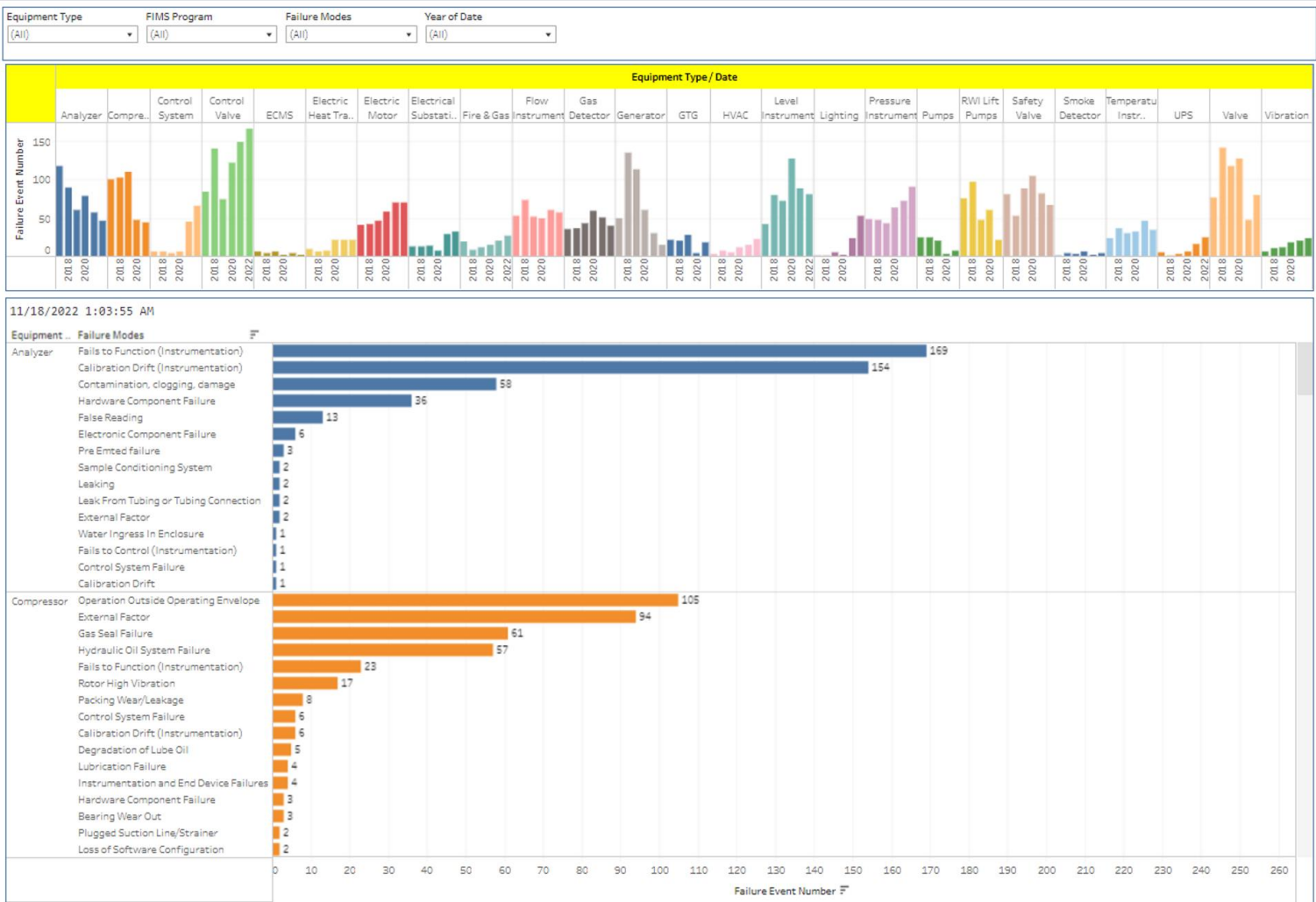


Info

- All data in mm (millimeter)
- Click in the dots to view detail trends



# Reliability Failure Event Monitoring





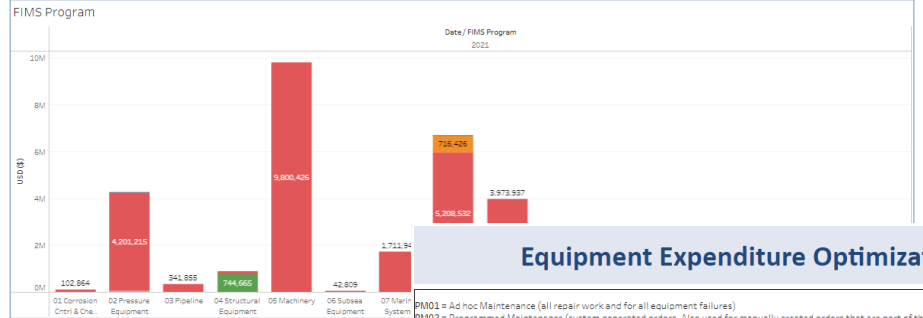


# Cost Optimization Financial Dashboard

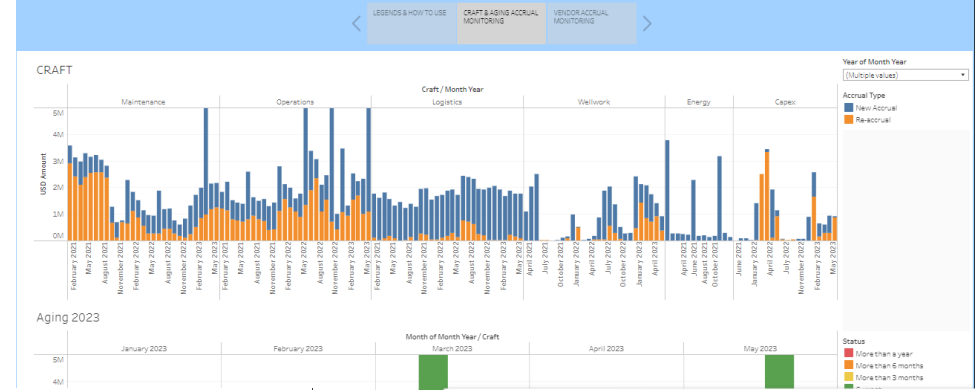


## ASSET EXPENDITURE MONITORING

Injection	Overall Field Opex	Field Opex by Group	Overall CAF	CAF by Function	Total Opex Pressure & Saving	Field Opex by IST Process	Field Opex by FIMS Program
287,264	13,046,134	2,073,099	1,333,673	21,514,503	42,809	6,437,640	18,565,073
						10,397,683	1,436,934
						597,513	160,140
						113,392	74
						401,248	2,644,198
							181,903,944



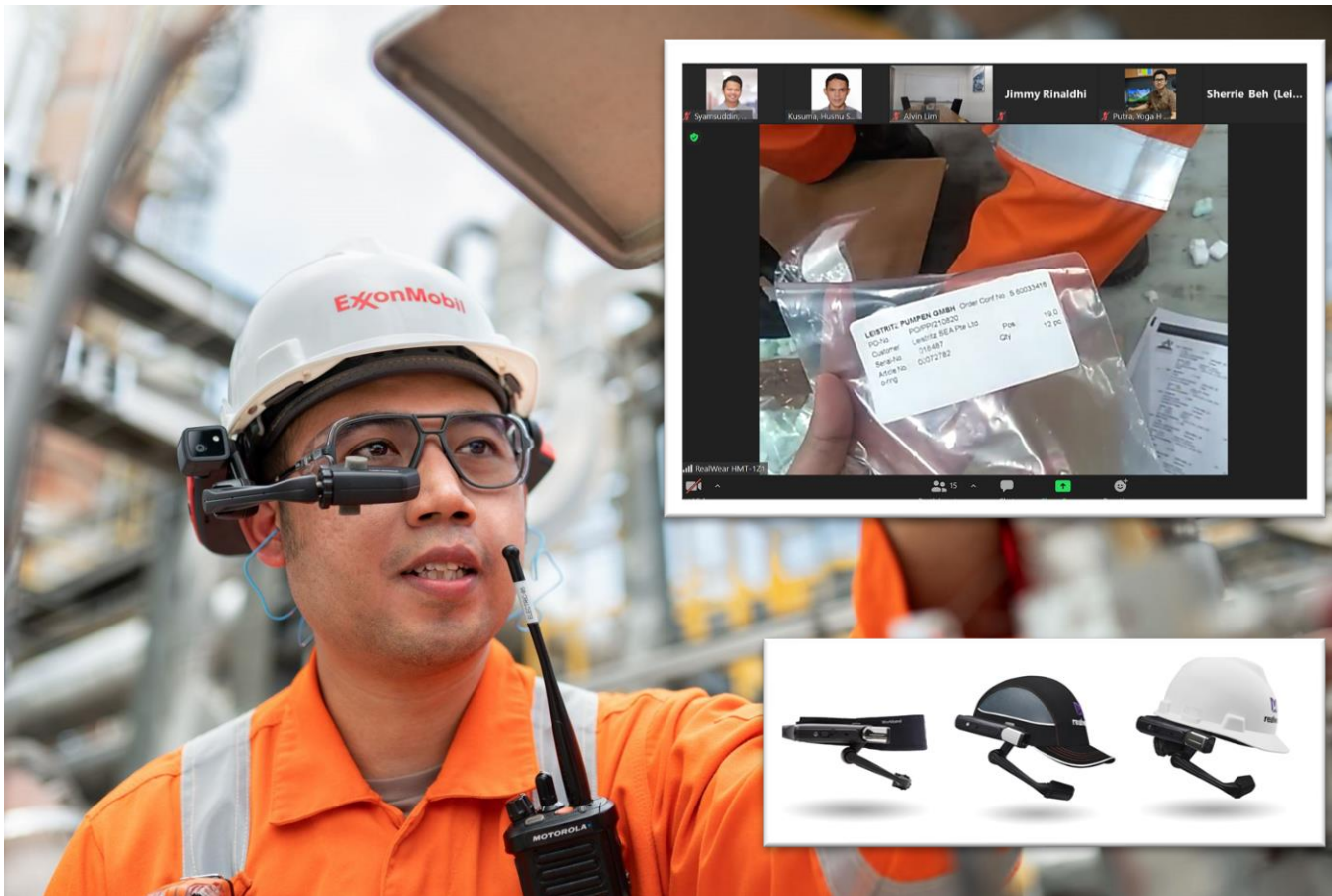
## Accrual Monitoring



## Equipment Expenditure Optimization/Insights

**PM01** = Ad hoc Maintenance (all repair work and for all equipment failures)  
**PM02** = Programmed Maintenance (system generated orders. Also used for manually created orders that are part of the maintenance program (for example, planned overhaul, paint program, and so forth).  
**PM03** = Facilities Capital (manually created without an associated notification and is used for capital work)  
**PM04** = Facilities Expense (manually created without an associated notification and is used for operating expense work)  
**PM05** = Autonomous Maintenance (System generated orders and equipment strategy tasks carried out by non-Maintenance personnel)





## Industrial Wearable and Mobility Devices to support Remote assistance for :

- Troubleshooting/testing
- External network certification
- Safety inspection
- Equipment inspection and operation surveillance
- Practical Competency Assessment

# EMCL Digital Journey





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# Thank You