#### PROMETHEUS USER GROUP USER

**Outage Management With SAP and Prometheus** Michael Birklett – Functional Consultant

April 2023

## Agenda

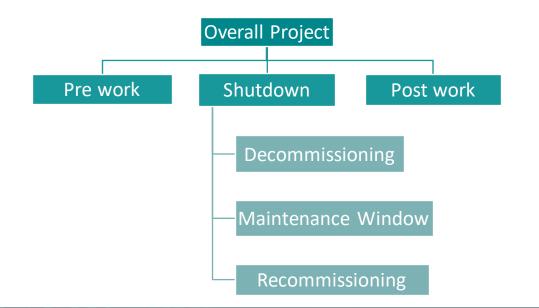
This session will provide an overview of how the Prometheus ERP Advanced solution along with SAP can be leveraged to manage the preparation, planning, scheduling, execution, and reporting aspects of an outage. This approach demonstrates how many outage processes can be handled within the SAP and Prometheus environments. Topics discussed during this session includes:

- Establishing a Work Breakdown Structure in SAP PS
- Outage Based Functional Navigators
- Preparing SAP PM for an Outage Event (Work Centers, System Conditions, Revisions, Critical Activities)
- Schedule Development, Simulation, and Progression in Scheduler
- Manpower Forecasting
- Outage Key Dates and Events Milestones
- Execution Reporting and Analysis



#### Work Breakdown Structures

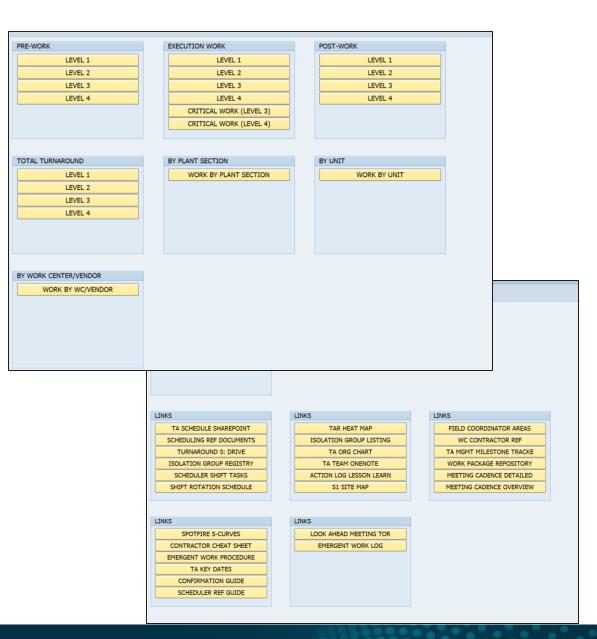
- SAP PS and PM integration to organize and structure the outage event
- Project Builder (t-code CJ20N)
- PS Outage Templates



Project Builder: Pro	oject Y.DS4
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	<ul><li><b>⊗ ⊗</b></li></ul>
Project Structure: Description	Identification
- 🔁 Annual Shutdown	Y.DS4
T 🛆 Shutdown Scope	Y.DS4.1
Pre-Work	Y.DS4.11
<ul> <li>Shutdown Execution</li> </ul>	Y.DS4.12
<ul> <li>A Roughing Mill Shutdown</li> </ul>	Y.DS4.12-1
• 🔔 Coiler Shutdown	Y.DS4.12-2
<ul> <li>Eurnace Shutdown</li> </ul>	Y.DS4.12-3
• 📥 Finishing Mill Shutdown	Y.DS4.12-4
Post-Work	Y.DS4.13

### **Outage Navigators**

 Functional navigators used by members of the outage team to organize and quickly access work backlogs, execution schedules, reports and external reference documents.



#### Preparing SAP PM for an Outage Event

- Outage Work Centers
- Revisions
- System Conditions used at the work order to identify Pre-Work, Ramp-Down Work, Execution Work, Ramp-Up Work and Post Work activities.
- Critical Activities identified using revision, priorities, WBS or free-text fields

# Schedule Development, Simulation and Progression in Scheduler

- Schedule Levels (1, 2, 3)
- Networks and Relationships
- Schedule Simulations & Baselines
- Schedule Progression via transaction IW70

Opr. short text	L 02 03		04		05	06	07	08			
Maintenance Window			 								
Utilities Area											-
UT Preventive Maintenance											-
4B5M-REPLACE ELECTRICAL CABINET FILTERS	PM01	7003613	0	01-ELEC							
LOTO	PM01	7003613	01-ELEC								
REMOVE & REPLACE FILTERS	PM01	7003613		1.00							
RETURN TO SERVICE	PM01	7003613		C 0.50							
4B5M-REPLACE ELECTRICAL CABINET FILTERS	PM01	7003613	01-EL	C 0.00							
UT Correctives											-
P-123: shaft oil leak		7002529			01-MECH						
verify oil sensor		7002529		C 4.00							
clean drip tray	PM01	7002529	01	-ELEC 12.00							
check oil plug	PM01	7002529			16.00						
replace light bulb	PM01	7002529			LEC 2.00						
P-123: shaft oil leak	PM01	7002529		01	ELEC 0.00		1				
UT Upgrades											-
Production Area 1											-
A1 Preventive Maintenance						-					
1W Vibration Test - Area 1		7002877						01-INST			
1W Vibration Test - Area 1	PM02	7002877					01-1	AST 🔲 4.00			
A1 Correctives					0						
Valve operates difficult		7003417							01-MECH		
Loto		7003417				01-OPS					
Errect Scaffold		7003417					E 10.00				_
Disconnect Instrumentation		7003417				01-	-PIPE	2.00			
Remove Valve		7003417						1-PIPE 4.00			
Install Valve		7003417						01-PIPE 4.00			
Connect Instrumentation		7003417						01-PIPE 2.00			
Remove Scaffold	PM01	7003417						01-PIPE	6.00		
Reinstall to service	PM01	7003417							1-PIPE 4.00		
Valve operates difficult	PM01	7003417							01-MECH 0.00		
A1 Upgrades											-
Production Area 2											-
A2 Preventive Maintenance											

🖙 Selection Action	<mark>Mode</mark> Reference Report System <u>H</u> elp	
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Prometheus	Simulation Mode	nous]
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		06/30/2017 07/01/2017 07/02/2017
	Opr. short text	F S S
3	PGU 2017 Turnaround	
	Overall Turnaround WBS	
	Shutdown Phase	Shutdown Phase
<u> </u>	Decommissioning	Decommissioning
	Utilities Area	Utilities Area
	Repair conveyor belt	
	Perform LOTO to zero energy state	
	Unbolt conveyor frame and remove parts	
	Install new conveyor belt	
	bolt conveyor frame back together	

#### Outage Key Dates & Events Milestones

- Milestones are created via Work Orders to mark major checkpoints throughout the outage
- Milestones are linked to work package operations/activities
- Floating VS Constrained Milestones
- Used to measure overall even float

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				🔶 Start	Decommissi	ion															
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	Complete Utilities Maintenance													•	Complete U	tilities Main	enance				
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	— Turnaround Complete																	•	Turnaround	Complete	

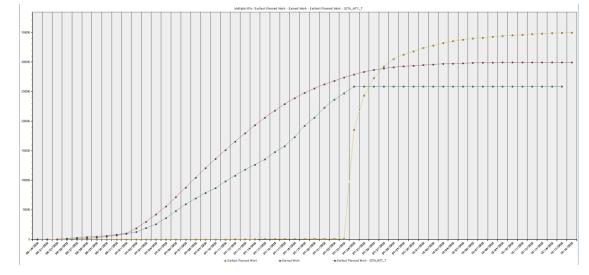
#### Manpower Forecasting

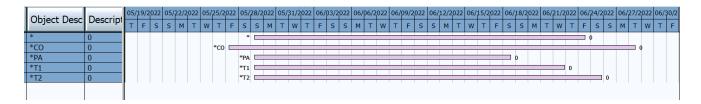
- Available via Scheduler's List Edit
- Quickly identify the quantity of contractor and technicians needed on any given day sorted by work center
- Adjustable Wrench Time estimates

Fore	cast																
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	01-ELEC			0.0 •	1.0 •	1.5 •	42.0 •	3.6 •	30.7 •	19.7 •	2.4 •	14.8 •	1.2 •	0.0 •	0.0 •	2.0 •	2.0
	01-INST			0.0 •	0.0 •	0.0 •	7.6 •	0.4 •	2.0 •	7.3 •	10.8 •	5.2 •	0.0 •	0.0 •	0.0 •	6.0 •	0.0
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	01-PIPE			0.0 •	0.0 •	0.0 •	48.0 •	0.0 •	18.7 •	41.2 •	45.6 •	17.9 •	0.0 •	0.0 •	0.0 •	54.6 •	25.5
	01-SCAF	ŦΞ		0.0 •	0.0 •	0.0 •	37.9 •	26.1 •	0.0 •	0.0 •	12.0 •	0.0 •	0.0 •	0.0 •	0.0 •	24.0 •	16.0 •
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<mark></mark>				0.0 ···	31.8 ••••	11.8 ••••	177.0 ····	86.7 •••	129.5 ····	150.8 ····	107.4 ····	39.9 ····	1.2 •••	0.0 •••	3.0 •••	97.6 •••	43.5

### **Execution Reporting & Analysis**

- Many reports can be created directly in Scheduler using layouts and variants
- Percent Complete Progress
   Report
- Man-Hour Forecast Report
- Execution S-Curve Report
- Critical Path Analysis
- 3-Day Look Ahead Schedule





							2022																										
	WBS Phase/Sec/Syst	WBS Phase/Sec/Syst	Order	Object Description	Earl.start date	Total float	Total May						June																				
						Inclar	19 2	0 21	22 23	24 2	5 26	27 28	29 3	0 31	12	3	4	56	7	89	10	11 12	2 13 <sup>-</sup>	14 15	16 1	7 18	19 20	21 2	2 23	24 25	26 2	7 28 1	29 30
116		WBS Plant Section:	×	0													*	-			_	-		-			-			]			
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		02	23452396	CPF 1 FIRST OIL	06/22/2022	49																			CPF	1 FIR	ST O	∟ ◀					
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# Thank you



## Questions?

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#### PROMETHEUS USER GROUP USER CONFERENCE

MICHAEL BIRKLETT FUNCTIONAL CONSULTANT