Part 2.1: Maintenance Functions – PM

Calem Enterprise Training

Summer 2024

Austin, Texas

Goals
I know how to setup PM
I know how to create a time schedule for PM Plans
I know how to create a PM Plan
I know how to create a PM Round and Round Stops
I know how to create a PM for Round or Inspection
I know how to create a PM by meter readings/triggers
I know how to generate WO to test PMs
I know how to populate PM module via excel files

Preventive Maintenance

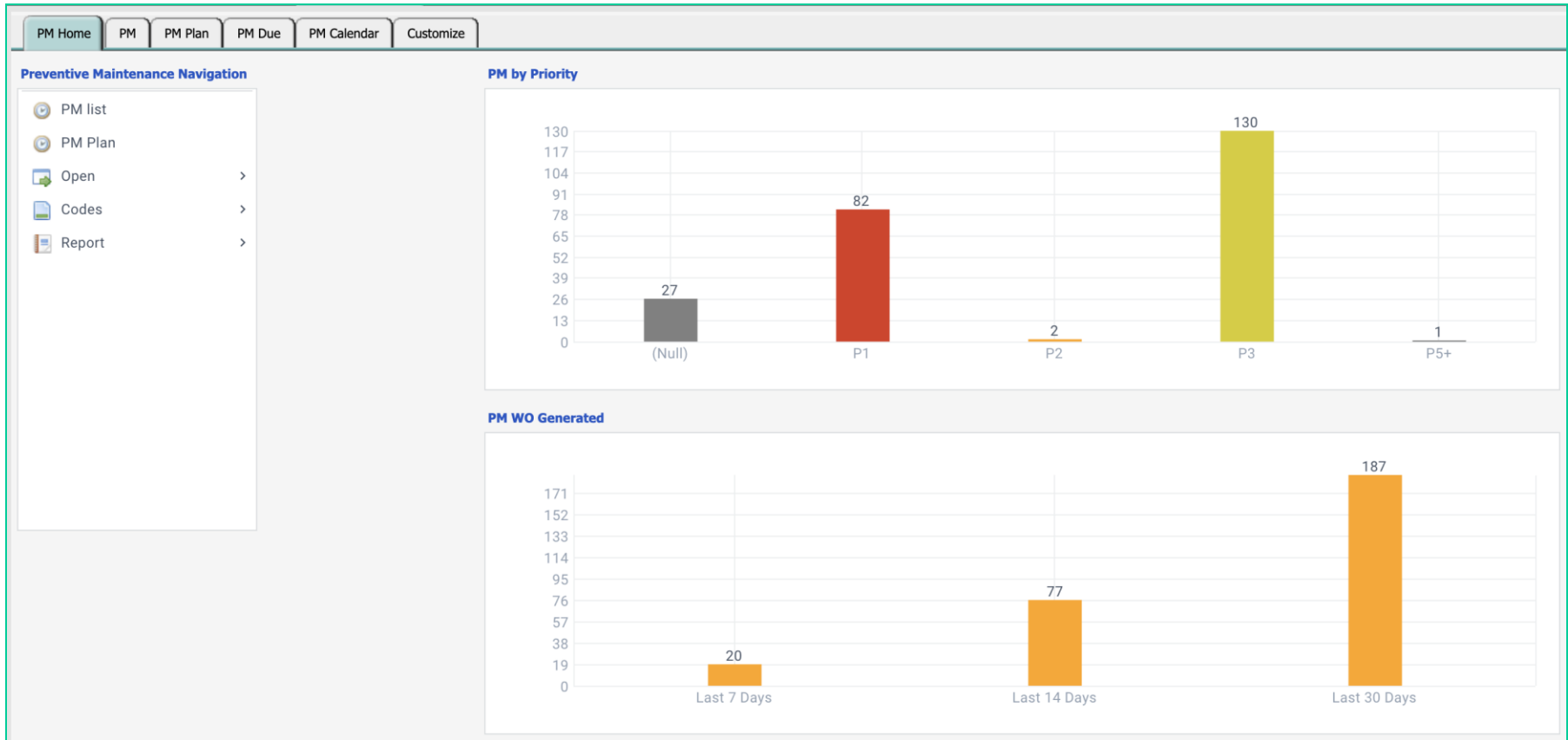| Asset and Location	Maintenance Schedules	Contract and SLA
Work Order	Service Request	Change Management

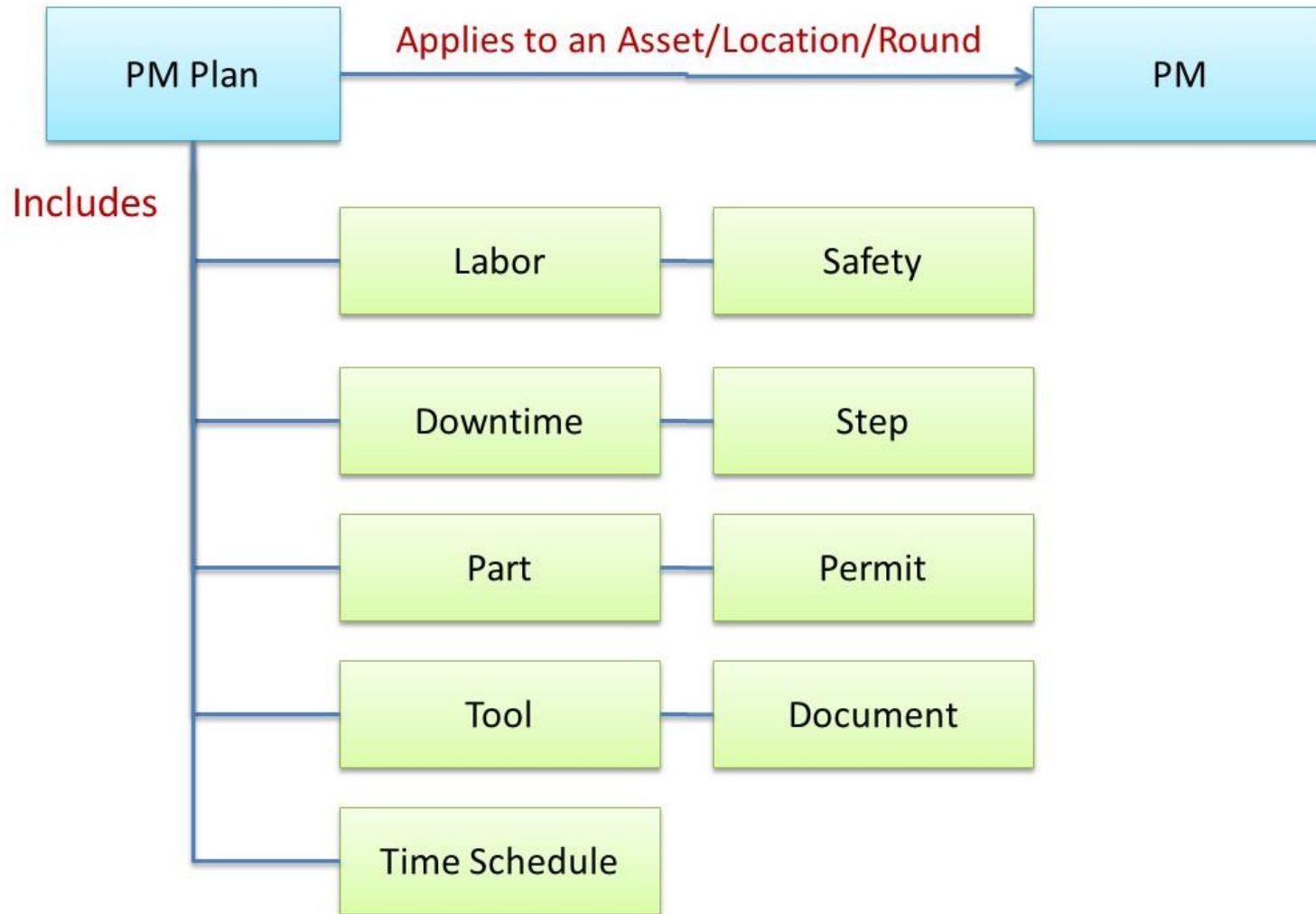# Product – Preventive Maintenance (PM)

- Work Orders are generated from PMs

PM Module – PM Plan

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- PM Plan: What To-Do and How Often
- PM: Which Asset/Location and When

PM Plan — Applies to an Asset/Location/Round → PM

Includes: Labor, Safety, Downtime, Step, Part, Permit, Tool, Document, Time Schedule

PM Module – Maintenance Schedules

Schedules	PM Plan Attributes
By time	Fixed repeat schedule
By time and standing WO	Floating repeat schedule
By condition	Fixed meter readings
By condition and standing WO	Floating meter readings
By time and meter	Fixed repeat sched/meter
By time/meter and standing WO	Floating repeat sched/meter
No schedule	Meter trigger
No schedule	On-demand Template
No schedule	Boilerplate Safety/Steps

PM Module – Create PM Plan (1)

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PM Plan list List > PM Plan Create

PM Plan

💾 Save   ❌ Cancel   📝 Customize

📤 Ready to save changes.

Plan #: ⊙	SEWING-M1
Subject: ⊙	Sewing machine monthly maintenance
Status:	Active ▾
PM type:	[ ] 🔲
Category:	Preventive ▾
Specialty:	[ ] 🔲
Duration (hours):	[ ]
Schedule type:	By time ▾
Release type:	Fixed ▾
Review reqd?:	☐
Reference?:	☐
Site access?:	☐
No default steps?:	☐
Meter Set:	[ ] 🔲
Sort #:	[ ]

Repeat schedule:

○ Weekly   ☐ Sun   ☐ Mon   ☐ Tue   ☐ Wed   ☐ Thur   ☐ Fri   ☐ Sat

○ Every [   ] weeks on [Sun ▾]

● Every [1] months on   ○ Day of week [First ▾] [Sun ▾]

● Day of month [31 ▾]

○ Every [   ] days

Description: [   ]

- Plan #: the PM Plan number
- Subject: a short description
- Status: Active. An inactive PM Plan is ignored in work order generation
- PM Type: a type code. It's optional.
- Category: default is Preventive maintenance
- Specialty: a work order specialty code
- Duration (hours): estimated hours taken for perform this PM Plan
- Schedule type: default is by time. It can be by meter, or by time and meter.
- Release type: fixed for release by time regardless of work order completion status. "Floating" release type will not generate work orders till previous work orders from this PM are completed.
- To get a PM to release on the last day of the month, select "31" for the "Day of month" for schedules by months.
- Review required: acceptance of completed work order is required before a work order can be closed.
- Reference: a PM plan of reference cannot be used directly in PMs. They can be cloned and used in PMs.

- Site access: PM Plan can be site specific if checked. Use "PM | Open | PM Plan Site" to assign sites that can use this PM Plan if checked.
- No default steps: do not copy boilerplate steps (see http://www.calemeam.com/calemcustomers-2/boiler-plate-steps-in-pm-plan)
- Meter set: if the PM Plan is a meter collection job (see http://www.calemeam.com/calemcustomers-2/meter-reading-rounds)
- Sort #: a custom sort field for sorting PM Plans
- Repeat schedule: the frequency of repeat of this PM Plan. This repeat schedule will be used in the PMs of the PM Plan unless overwritten in PMs.
- Description: A long description of the PM Plan.

PM Module – PM Plan Form

Plan Main	PM	Labor	Material	Step	Document	Cloned	Log	Permit	Customize

PM Plan (1 of 118)

Customize

Plan #: 0911-METER-300

Subject: Meter-based PM job for 0911 (new)

Status:	Active	**PM type:**	
Category:	Emergency	**WO type:**	
Schedule type:	By time and meter	**Duration (hours):**	20
Release type:	Floating	**Sched code:**	M 4
Repeat schedule:	Every 4 months on First Sun		
Labor hours:	2	**Downtime hours:**	2
PM pattern:		**PM seq:**	
Review reqd?:	☑	**Reference?:**	☐
Site access?:	☑	**Parent plan:**	
No default steps?:	☐		
Sort #:			

Description: desc 001 (new)

PM Plan – PMs

PMs using the PM Plan

| Plan Main | PM | Labor | Material | Step | Document | Cloned | Log | Permit | Customize |

PM Plan (1 of 118)

Plan #: 0911-METER-300

Subject: Meter-based PM job for 0911 (new)

PM list (8)

Customize

	PM #	Asset #	Location	Subject	Status	Next due	Last modified
☐	0911-2345-Meter-300	0911-2345	B02.HQ	Meter-based PM job for 0911 (new)	Active	3/27/16 7:00 …	12/16/15 10:35 P…
☐	0911-METER-300-001	JJ.CA.AC-001	OH-CA-001	Meter-based PM job for 0911 (new)	Active	12/15/15 7:00..	7/28/15 1:54 PM …
☐	0911-METER-300-155	200-001	CA.Building2	Meter-based PM job for 0911 (new)	Active	10/15/15 7:00..	6/2/15 11:08 AM…
☐	0911-METER-300-325	100HP-3	OFFICE.IT	Meter-based PM job for 0911 (new)	Active	12/15/15 7:00..	7/28/15 1:54 PM …
☐	0911-METER-300-811	100HP-014	B02.HQ	Meter-based PM job for 0911 (new)	Active		12/11/13 10:37 A…
☐	0911-METER-300-991	401402-16	OFFICE.IT	Meter-based PM job for 0911 (new)	Active	12/15/15 7:00..	7/28/15 1:54 PM …
☐	0911-METER-300-995	forum_998	OFFICE.IT	Meter-based PM job for 0911 (new)	Active		12/11/13 10:58 A…
☐	AR1-MT-TRIGGER-001…	AR1-AUX-PORT	CA.BuildingMain-…	Meter-based PM job for 0911 (new)	Active	12/15/15 7:00..	7/28/15 1:54 PM …

PM Plan – Labor and Downtime

Plan Main	PM	Labor	Material	Step	Document	Cloned	Log	Permit	Customize

PM Plan (1 of 118)

Customize

Plan #: 0911-METER-300

Subject: Meter-based PM job for 0911 (new)

Labor (1)

Customize

	Job role	Hours	Crew size	Note
☐	IT.Applications	2		

Downtime (1)

Customize

	Hours	Note	Last modified	
☐	2		2/3/13 2:38 PM ...	

PM Plan – Part & Tool

Plan Main	PM	Labor	Material	Step	Document	Cloned	Log	Permit	Customize

PM Plan (1 of 118)

Customize

Plan #: 0911-METER-300

Subject: Meter-based PM job for 0911 (new)

PM part (1)

Customize

	Item	Qty	Uom	Stock type	Note
☐	AS-SHIP-2350	2		Other	AS model ship

PM tool (1)

Customize

	Item	Qty	Uom	Stock type	Note
☐	LATITUDE-D820	2		Stock	Dell Latitude D820

PM Plan – Safety & Step

Plan Main	PM	Labor	Material	Step	Document	Cloned	Log	Permit	Customize

PM Plan (1 of 118)

📝 ⬆ ⬇   ❌   📋 📝 Customize

Plan #: 🔵 0911-METER-300

Subject: 🔵 Meter-based PM job for 0911 (new)

PM safety (2)

➕ ➖ 🔄   📝 Customize

☐	Seq	Description	
☐	10	Make sure all power is turned off.	
☐	20	Put up signs	

PM step (3)

➕ ➖ 🔄   📝 Customize

☐	Seq	Description	
☐	10	Clean up env and place a tag.	
☐	20	Drain and refill	
☐	30	Take readings	

PM Plan – Document & Comment

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Plan Main	PM	Labor	Material	Step	Document	Cloned	Log	Permit	Customize

PM Plan (1 of 118)

Customize

Plan #: ⦿ 0911-METER-300

Subject: ⦿ Meter-based PM job for 0911 (new)

PM document (1)

View file   Customize

	Seq	Document	Note	Last modified	
☐	10	upload_tpl_samples.zip		6/26/15 10:40 AM...	

Comment (0)

Customize

	Comment	Last modified

PM Plan – Permits

Plan Main	PM	Labor	Material	Step	Document	Cloned	Log	Permit	Customize

PM Plan (1 of 118)

Customize

Plan #: 0911-METER-300

Subject: Meter-based PM job for 0911 (new)

Permit (2)

Customize

	#	Permit	Note	Last modified	
☐	1	Hot Work Permit	Manual entry	1/31/16 4:14 PM…	
☐	2	Work at Height Permit	Manual entry	1/31/16 4:14 PM…	

PM Module – PM Round

- Use PM Round to perform PMs for multiple assets/locations
- Each asset or location represents a round stop to perform PM
- Each asset/location will be generated as a child work order for the PM

PM is the application of a PM Plan to an Asset/Location

- PM = PM Plan + Asset/Location + PM Round (Optional)
- Set "PM Plan", an "Asset" or a "Location"
- Set "Next due" to generate WO from the PM
- Set "Days Ahead" to generate WO ahead of due time. Default is 7 days.

PM Module – Create PM (2)

- Set PM Round to do maintenance for a set of assets | locations.
- Set Meter Set for taking readings of a set of meters.
- Set SLA contract for PMs to be controlled by contract's validity

- Set Work Order Release Info: Status, Assignment
- Overwrite schedule in PM Plan only when necessary

PM Form - Inspection

- You may add more assets to the inspection list
- A single PM work order with in its inspection list
- WO cost will be tracked at the PM asset or location

PM Round vs Inspection

PM Round	PM Inspection
A PM WO and Child PM WO for each round stop	A PM WO with assets in inspection list
Round stop can be locations	Inspection lists with assets
Child PM WO an be assigned to users	Multiple users can be assigned to a WO
Costs are reported to round stop location/asset	Costs are reported to PM asset or location

- See http://www.calemeam.com/calemcustomers-2/when-to-use-pm-inspection-and-rounds

PM Form - Meter

- Release by meter reading interval
- Release by meter triggers

PM Form - Sequence

- Release other PMs with the PM
- Exclude other PMs when this PM is released

PM Form – Work Orders

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Work Orders generated from the PM

| PM Main | Inspection | Meter | Sequence | Work Order | Log | Customize |

PM (3 of 147)

Customize

PM #: 0911-METER-300-155

Subject: Meter-based PM job for 0911 (new)

Work Order (7)

Customize

#	Wo #	Asset #	Location	Status	Priority	Time requested	Need by	Last modified
1	64991	200-001		New	P1	11/29/13 8:19 PM...	1/15/14 8:00 PM E..	2/22/16 6:14 PM ...
2	69758	200-001		New	P1	3/4/14 7:51 PM E...	4/15/14 8:00 PM E..	2/22/16 6:14 PM ...
3	74097	200-001		New	P1	5/28/14 9:43 AM ...	7/15/14 8:00 PM E..	2/22/16 6:14 PM ...

PM Form – Logs

Audit Log of PM

| PM Main | Inspection | Meter | Sequence | Work Order | Log | Customize |

PM (3 of 147)

Customize

PM #: 0911-METER-300-155

Subject: Meter-based PM job for 0911 (new)

PM Log (0)

Customize

#	Table name	Field name	From	To	User	Time
						No results found.

PM Calendar

Get PM Calendar for a time period

PM Calendar – Monthly

PM Calendar Excel File

- Generated from PMs based on repeat schedules
- Start date and duration

2015 PM Schedule (2015-05-01 to 2015-05-31) (2015-05-06 22:05)																																		
2015	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
JAN		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
FEB					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
MAR					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
APR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

APR entries:
- 200-001/VEHICLE-M3
- Test-PROD-008/VEHICLE-M3
- MySite-00580/VEHICLE-M3
- MySite-01484/VEHICLE-M3
- z123456-02/VEHICLE-M3
- 7890677/VEHICLE-M3
- MySite-05523/VEHICLE-M3
- PROD-NULL-LOC-002/VEHICLE-M3

(next month) days: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

- Test-PROD-008/VEHICLE-M3
- PROD-NULL-LOC-002/VEHICLE-M3
- MySite-00580/VEHICLE-M3
- 200-001/VEHICLE-M3
- MySite-05523/VEHICLE-M3
- MySite-01484/VEHICLE-M3
- 7890677/VEHICLE-M3

PM Calendar – Annual

2015	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
FloatingPM					100HP-006							
FloatingPM					100HP-007							
FloatingPM					SHIP-TEST-001							
NHI-Testing					100HP-005							
CG-001					DELL-SVR-0004							
CG-001					SHIP-TEST-001							
CG-F01					DELL-SVR-0004							
FLOAT-001					100HP-013							
FLOAT-001					DELL-SVR-0004							
WKLY-CG-001					100HP-008							
BiMonthlyPM					Sensor-001							
FIXED-001					DELL-SVR-0004							
Bi-Weekly_zc					100HP-015							
Bi-Weekly_zc					45678							
Bi-Weekly_zc					FARADAY							
Bi-Weekly_zc					HBE-TEST-002							
Bi-Weekly_zc					MySite-01400							
WKLY-BEARING-REP					100HP-3							
WKLY-BEARING-REP					401402-16							
WKLY-PM					233-455-901							
WKLY-PM					401402-17							
VEHICLE-M3				200-001								
VEHICLE-M3				7890677								

- Data Upload Part 3: PM
    - http://www.calemeam.com/calemcustomers-2/data-upload-part-3-preventive-maintenance
- Review PM Plan schedules in JSON
    - Option to upload with JSON schedules
    - Option to upload without JSON schedules for manual setup

- Create a PM Plan
  - Set a repeat schedule of every three months on first Monday
  - Add Labor, Downtime, Part, and Tool
  - Add Safety and Step, Doc, and Permit
- Create a PM Round
- Creating a PM
  - Set initial due time
  - Set a PM to generate 30 days before its due time
  - Launch server process to manually generate work orders to verify
- PM Calendar Generation for the year

Next Module – Contract & SLA

Asset and Location	Maintenance Schedules	Contract and SLA
Work Order	Service Request	Change Management

Thank You for Attending

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