



Managing Risk
Assuring Compliance
Optimizing Performance

Pipeline Compliance Activities and Maximo





Jarret Reeves
VP Product Manager of
Software Solutions
jarret.reeves@g2-is.com
713-306-3052

. Agenda

- ✓ Who is G2 Integrated Solutions
- ✓ Compliance activities pipeline operators legally must address
- ✓ Putting it in Context with some examples
- ✓ Challenges with managing “Compliance” tasks
- ✓ The Problem statement
- ✓ Possible solution
- ✓ Versions of Maximo
- ✓ Demonstration



COMPANY OVERVIEW

DYNAMICALLY INTEGRATED ASSET LIFE-CYCLE MANAGEMENT AND TECHNOLOGY COMPANY
PROVIDING MEASURED VALUE TO CUSTOMERS

G2 Integrated Solutions (G2-IS) provides responsive support and a comprehensive suite of consulting and technology solutions that address asset performance throughout its life cycle.



■ Compliance Activities Operators must comply with

- ✓ Federal - PHMSA (Pipeline and Hazardous Materials Safety Administration)
- ✓ State regulatory drivers (e.g. Texas Railroad Commission)
- ✓ Internal Company compliance items
- ✓ Typically annual reporting associated with them items

Regulatory examples include....

Regulation	Title	Statement
192.481	Atmospheric corrosion control: General	operator must clean/coat each pipeline or portion of pipeline that is exposed to the atmosphere, except pipelines under paragraph (c) of this section. Every 3 years NTE 39 months
192.465(c)	Cathodic Protection	...failure would jeopardize structure protection must be electrically checked for proper performance six times each calendar year, but with intervals not exceeding 2 1/2 months.
192.5, 192.613	Class Location	Each operator shall have a procedure for continuing surveillance of its facilities to determine and take appropriate action concerning changes in class location
192.477	Corrosion Control	...Each coupon or other means of monitoring internal corrosion must be checked two times each calendar year, but with intervals not exceeding months .



Internal and Annual reporting item examples

Item	Frequency
Annual PHMSA Reports	Once a year
National Pipeline Mapping submission	Once a year
Emergency Responders meetings	Once a year
Public awareness on One Call	Every 2 years

Examples of activities against a physical pipeline

Real world example

	A	B	C	D	E	F	G	H	I	J
1										
2										
3	CFR/CITATION	ACTIVITY	REQUIRED FREQUENCY	PERSON RESPONSIBLE	EAM PM	DUE	2017			
4							WO #	Date	OQ?	Comments
5										
6										
7	192.481	Atmospheric Corrosion Inspection								
8		Onshore	Every 3 years NTE 39 months		Not in EAM	2/24/2020		2/24/2017	John Smith	No action items. Assessment condition adequate.
9		Offshore	1X per year NTE 15 months		Not in EAM					
10		Log Cabin/Pipeline				1/4/2018		1/4/2017	John Smith	No action items. Assessment condition adequate.
11		Pipeline Receiver						1/4/2017	John Smith	
12										
13										
14		Cathodic Protection								
15	192.465(c)	Critical Bond Reading	6X per year NTE 2.5 months	John Smith	Not in EAM					
16	192.465(c)	Non-Critical Bond Reading	1X per year NTE 15 months	John Smith	Not in EAM					
17	192.465(b)	Rectifier Reading	6X per year NTE 2.5 months	John Smith	Not in EAM					
18		Annual Survey	1X per year NTE 15 months	John Smith	N-NS-I-A-0209					
19		Close Interval Survey		John Smith	Not in EAM					
20										
21	192.5, 192.613	Class Location	1X per year		Not in EAM					
22		Class 1 HCA								
23										
24		Corrosion Control								
25	192.477	Corrosion Coupon	2X per year NTE 7.5 months	John Smith	Not in EAM					
26		Maintenance Piggging								
27		ILI						1/1/2018		
28										
29		Leak Surveys								
30	192.706	Leak Survey	1X per year NTE 15 months		N-NS-M-A-0101					
31		Island						2/11/2018	2/11/2017	John Smith

Examples of “Programs” operators are running

Real world example

	A	B	C	D	E	F	G	H	I	J	K
	<u>CFR CITATION</u>	PROGRAM/REPORT	REQUIRED FREQUENCY	PERSON RESPONSIBLE	LAST DONE	DUE	LATE	EAM PM	MOC	PROCEDURE	NOTES
1											
2											
3		ANNUAL REPORTS									
4	191.17(a)	PHMSA Report Gas - Nat	1X per year	John Smith	3/15/2016	3/15/2017	3/15/2016	Not in EAM			
5	195.49	PHMSA Report HL -1	1X per year	John Smith	6/1/2016	6/15/2017	6/15/2015	Not in EAM			
6		PHMSA Report HL -2	1X per year	John Smith	5/31/2016	6/15/2017	6/15/2015	Not in EAM			
7											
8		NPMS									
9	191.22(d)/195.64(d)	National Pipeline Mapping System Submission -1	1X per year	John Smith	3/14/2016	3/15/2017	3/15/2016	Not in EAM			
10	195.64(d)	National Pipeline Mapping System Submission- 2	1X per year	John Smith	3/14/2016	3/15/2017	3/15/2016	Not in EAM			
11											
12		PUBLIC AWARENESS/DAMAGE PREVENTION									
13		Emergency Responders Meeting	1X per year	John Smith	10/17/2016	10/17/2017	12/31/2016	Not in EAM			
14		Excavator/Land Developer Letter	1X per year	John Smith	7/18/2016	7/18/2017	10/18/2017	Not in EAM			
15		Public Official Email	Every 3 Years	John Smith	7/2/2015	7/2/2018	10/2/2018	Not in EAM			
16		Affected Public Brochure	Every 2 years	John Smith	7/1/2016	7/1/2018	10/1/2018	Not in EAM			
17		Communication with One-Call Cnt.									
18											
19		SPCO									
20		SPCO Report	1X per year	John Smith	2/29/2016	3/1/2017	3/1/2017	Not in EAM			
21											

■ The challenge operators have

- ✓ Need to manage information in the form of schedules
- ✓ Assign and communicate responsibility
- ✓ Measure progress
- ✓ Report activities to regulators or internal compliance
- ✓ In the most cost efficient manner



■ The Problem Statement....

Awareness

- ✓ Operators are managing these tasks in Excel! (emailing, version control, multi-user limitations, access, etc...)
- ✓ More than likely have a scheduling system in house
- ✓ G2-IS have heard “solution does not exist in market space”! Really?
- ✓ Operators struggle managing this key info in Excel
- ✓ Possibly the term “Preventive Maintenance” is confusing people?



■ The solution....

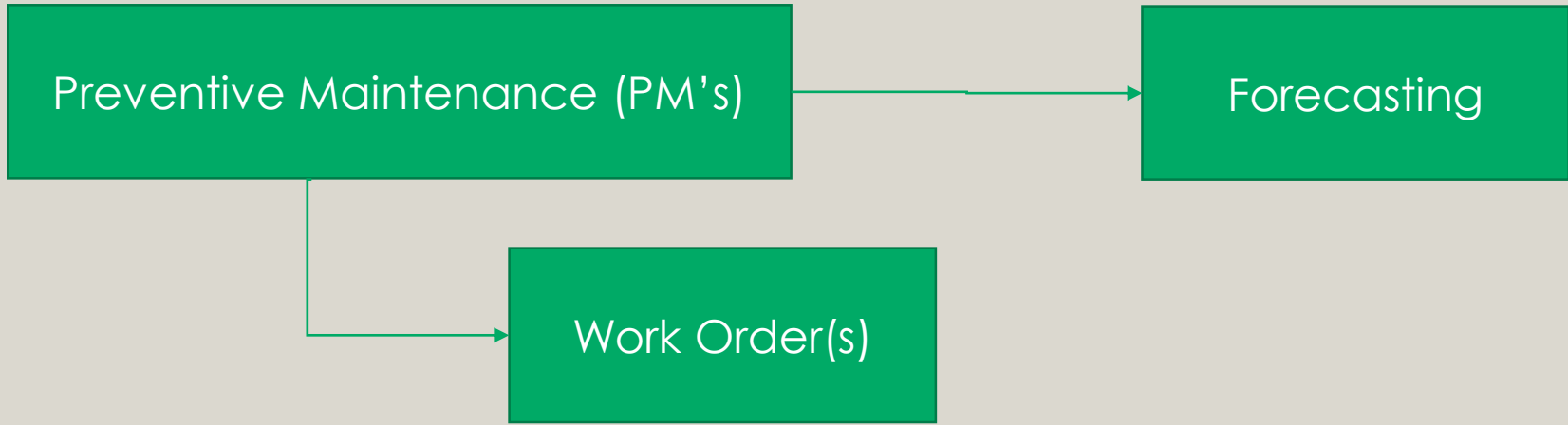
Already exists in the market, Operator more than likely already own it

- ✓ Use Maximo Scheduling (PM's and Work Orders)...
- ✓ Tasks does not have to be tied to an asset, maybe a location
- ✓ Scales past the typical MS Excel data and collaboration issues
- ✓ Even if you don't own it, rent it thru a browser (Amazon, Element Blue, etc...)



G2-IS recommends using PM's and WO's to our customers

CFR/CITATION	ACTIVITY	REQUIRED FREQUENCY	PERSON RESPONSIBLE
	Cathodic Protection		
192.465(c)	Critical Bond Reading	6X per year NTE 2.5 months	John Smith
192.465(c)	Non-Critical Bond Reading	1X per year NTE 15 months	John Smith
192.465(b)	Rectifier Reading	6X per year NTE 2.5 months	John Smith
	Annual Survey	1X per year NTE 15 months	John Smith
	Close Interval Survey		John Smith



2017			
WO #	Date	OQ?	Comments
	2/24/2017	John Smith	~Hand brush or remove scale as needed and coat using Corroseal to prevent further corrosion. Top coat using Devoe 235 or 236. 1) Engineering evaluation of non-typical assembly. ~Evaluate soil to air interface and contact inspect.
	2/24/2017	John Smith	~Hand brush or remove scale and coat using Corroseal (top coat using Devoe 235 or 236). 1) Seal-weld all exposed threads or replace connect. w/socket weld fittings, or replace pipe with sch. 160. ~Repair/repl. Damaged comp. ~Excavate soil to air interface 1) Eng. evaluation of non-typical assembly ~Repair/repl leaking component. ~Install adequate support/restraint



■ Versions of Maximo

- ✓ Can be done with Maximo Core
- ✓ Maximo Linear would be best if you own pipelines, but not mandatory
- ✓ Maximo Spatial would be nice to display on a map in Esri, but not mandatory
- ✓ Oil and Gas has “Regulations” module would be useful, but not mandatory



Demonstration via screen
captures



Setting up the PM for Rectifier Readings

Visual Walkthrough using "Core"

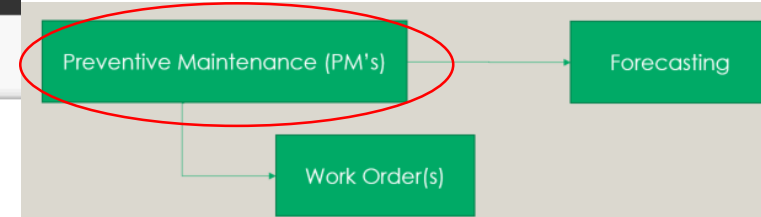
Preventive Maintenance

Query Find PM Select Action

Advanced Search Save Query Bookmarks

PMS Filter 1 - 2 of 2

PM	Description	Location	Asset	Priority	Forecast Exists?	Site
1040	Rectifier Reading	10INLINE			<input checked="" type="checkbox"/>	DENVER
666			1234		<input type="checkbox"/>	DENVER



Select Records

CFR/CITATION	ACTIVITY	REQUIRED FREQUENCY	PERSON RESPONSIBLE	EAM PM	DUE
192.465(b)	Rectifier Reading	6X per year NTE 2.5 months	John Smith	Not in EAM	
	Annual Survey	1X per year NTE 15 months	John Smith	Not in EAM	
	Close Interval Survey		John Smith	Not in EAM	
192.5, 192.613	Class Location	1X per year		Not in EAM	
	Corrosion Control				
192.477	Corrosion Coupon	2X per year NTE 7.5 months	Phil Ceder-Reinke	Not in EAM	
	Maintenance Piggig				
	ILI				
	Leak Surveys				
192.706	Leak Survey	1X per year NTE 15 months			
	Vault & Associated piping near SR crossing				11/24/2017
	Captain Cook to LNG				12/22/2017
	Pressure Limiting Device				
192.739(a)	PSV Inspection & Testing	1X per year NTE 15 months		Not in EAM	
192.743(a)	PSV Capacity Determination	1X per year NTE 15 months		Not in EAM	
	ROW Patrol				
192.705(b)	Class 1, 2 (Hwy/RR)	2X per year NTE 7.5 months		Not in EAM	
	Class 1, 2	1X per year NTE 15 months		Not in EAM	
	Class 3 (Hwy/RR)	4X per year NTE 4.5 months		Not in EAM	
	Class 3	2X per year NTE 7.5 months		Not in EAM	

Details of the PM for Rectifier Readings

Visual Walkthrough using "Core"

Preventive Maintenance

Query Find PM Select Action

List View PM Frequency Seasonal Dates Job Plan Sequence PM Hierarchy Forecast Forecast Cost

PM: 1040 Rectifier Reading Site: DENVER Status: ACTIVE

Master PM: >> Override Updates from Master PM? Attachments

Forecast Dates Locked? Forecast Exists?

Details

Location: 10INLINE >> 10" Gas Line Lead Time (Days): 0 Counter: 1

Asset: >> Lead Time Active? Use Job Plan Sequences?

Route: >> Include this PM in the Forecast? Has Children?

Work Order Information Responsibility

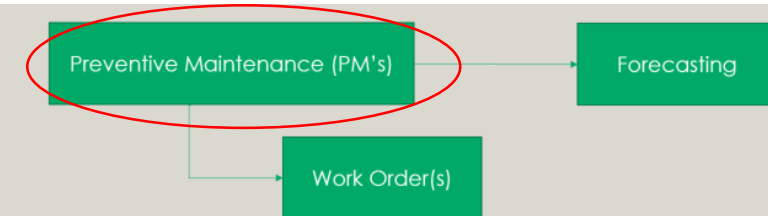
Job Plan: >> Description: Supervisor: JSMITH

Work Type: >> Last Start Date: 1/31/18 Crew: >>

* Work Order Status: WSCH >> Last Completion Date: 1/28/18 Crew: >>

Priority: >> Earliest Next Due Date: 4/16/18 Lead: >>

Interruptible? Start Constraint Offset: Work Group:



Setting frequency of PM for Rectifier Readings

Visual Walkthrough using "Core"

Preventive Maintenance

Query Find PM Select Action

List View PM Frequency Seasonal Dates Job Plan Sequence PM Hierarchy Forecast Forecast Cost

PM: 1040 Rectifier Reading Site: DENVER Status: ACTIVE Forecast Exists?

Work Order Generation Information

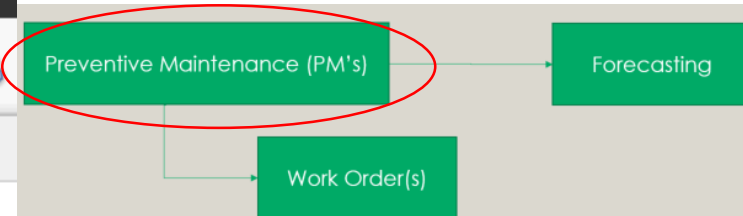
Use Last Work Order's Start Date to Calculate Next Due Date? Generate Work Order Based on Meter Readings (Do Not Estimate)?

Generate Work Order When Meter Frequency is Reached?

Time Based Frequency Meter Based Frequency

Frequency: 75 Alert Lead (Days): 0 Extended Date: Estimated Next Due Date: 4/16/18 Adjust Next Due Date?

Frequency Units: DAYS



Forecasting the PM for Rectifier Readings

Visual Walkthrough using "Core"

Preventive Maintenance

Query Find PM Select Action

List View PM Frequency Seasonal Dates Job Plan Sequence PM Hierarchy **Forecast** Forecast Cost

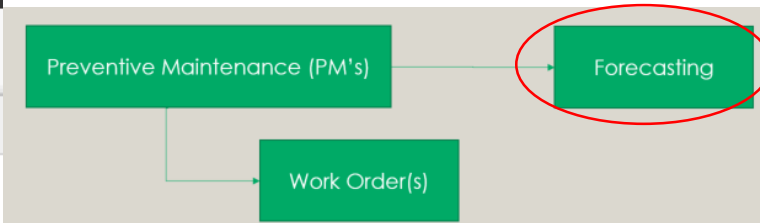
PM: 1040 Rectifier Reading Site: DENVER Status: ACTIVE

Forecast Dates Locked? Reforecast Subsequent Dates?

Forecast Details Filter 1 - 9 of 9

Forecast Date	Job Plan	New Date	Changed By	Changed Date	Remarks	Reforecast Pending?
▶ 4/16/18						<input type="checkbox"/>
▶ 6/30/18						<input type="checkbox"/>
▶ 9/13/18						<input type="checkbox"/>
▶ 11/27/18						<input type="checkbox"/>
▶ 2/10/19						<input type="checkbox"/>
▶ 4/26/19						<input type="checkbox"/>
▶ 7/10/19						<input type="checkbox"/>
▶ 9/23/19						<input type="checkbox"/>
▶ 12/7/19						<input type="checkbox"/>

Process Pending Reforecast



Executing the task with a Work Order

Visual Walkthrough using "Core"

Work Order Tracking

Jarret Reeves

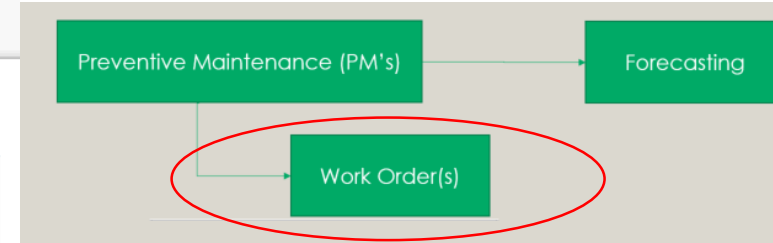
Query Find Work Order Select Action

Advanced Search Save Query Bookmarks

Work Orders Filter 1 - 3 of 3

Work Order	Description	Location	Asset	Status	Scheduled Start	Priority	Site
1288				WAPPR			DENVER
1327	Cathodic Protection	10INLINE		WAPPR			DENVER
1328	Rectifier Reading	10INLINE		COMP			DENVER

Select Records



Performing the work with a Work Order

Visual Walkthrough using "Core"

Work Order Tracking

Query Find Work Order Select Action

List View Work Order Plans Assignments Related Records Actuals Safety Plan Log Failure Reporting Specifications Service Address

Work Order: 1328 Rectifier Reading

Location: 10INLINE 10" Gas Line

Asset: 10" Gas Line

Configuration Item:

Parent WO:

Site: DENVER

Class: WORKORDEF

Work Type:

GL Account:

Failure Class:

Attachments

Status: COMP

Status Date: 1/28/18 10:29 AM

Inherit Status Changes?

Accepts Charges?

Job Details Asset Details Priority

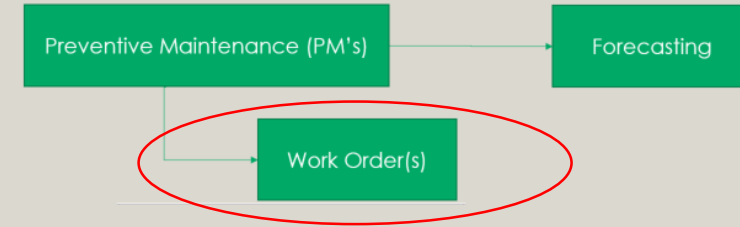
Job Plan: Asset Up?

Job Plan Revision #: Warranties Exist?

PM: 1040 SLA Applied?

Safety Plan: Charge to Store?

Contract: Current Value:



■ Conclusion

Solution is available in the market, just need to execute

- ✓ We see operators struggling with scheduling compliance tasks in MS Excel
- ✓ Unclear on why they feel the solution does not exist
 - Could be the term “Preventive Maintenance” vs. “Compliance” activities
 - Could be confusion over tying to a pipe segment
 - Could be IT barriers?



Thank You

Jarret Reeves

VP Product Manager of Software
Solutions

jarret.reeves@g2-is.com

713-306-3052



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Contact Information



CALIFORNIA

1855 Gateway Blvd
Suite 225
Concord, CA 94520
Phone: 925.478.8058

HEADQUARTERS

www.g2-is.com

10850 Richmond Avenue
Suite 200
Houston, TX 77042
Phone: 713.260.4000
info@g2-is.com

ARIZONA

2720 E Thomas Rd
Suite C250
Phoenix, AZ 85016
Phone: 928.853.3915