



How is COVID-19 Impacting Your P&IDs?

Field work and drafting best practices

About me



- Field and CAD/Drafting specialist for Cognascents
- 10+ years of experience in the field performing P&ID walk-downs, isometrics, drafting, and risk based inspection
- Support process safety and mechanical integrity projects
- I play the guitar and sing in a band



AGENDA

- What are P&IDs and their importance

- Safety Aspects - in a COVID-19 world

- Walk-down process - best practices

- CAD process - best practices



What is a P&ID and their importance

A drawing that outlines the plant's operation, identifies the role of the equipment, and shows interconnecting equipment and instrumentation



Plays a key role in understanding the plant's operations - operational safety

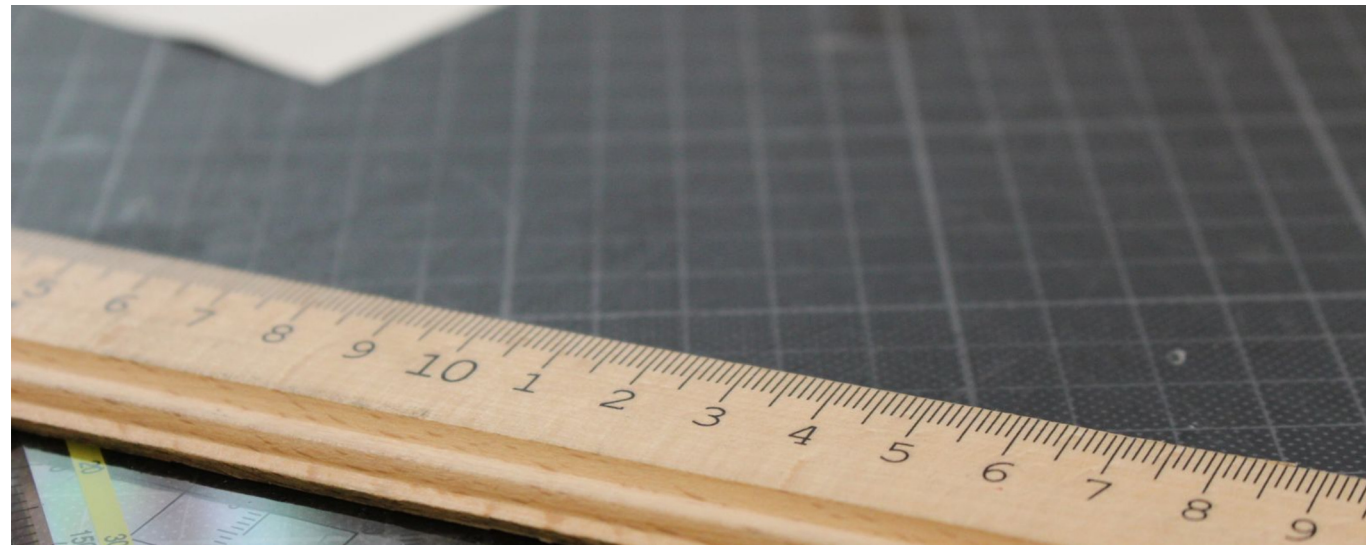


Plays a key role in inspection and reliability programs

Required by certain regulatory bodies
(e.g., OSHA)



Benefits future capital projects



Safety aspects of walk-downs

Old and new consideration

Follow CDC Guidelines

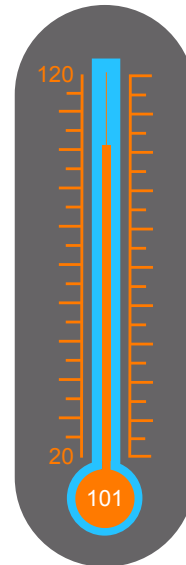
Social Distancing

Cover sneezes and coughs

Wash hands with soap and water while singing the first verse of Smash Mouths #1 hit, "ALL STAR"

Use hand sanitizer if soap and water is unavailable

Wear a mask



Follow Facility Guidelines

P&ID walkdowns are pretty much "a no contact sport". Does not require a lot of face to face contact

If facility guidelines differ or added to CDC guidelines (i.e., mask AND face-shield, two sets of gloves, body temperature readings, etc.)

Any questions can be handled via email, video chat, or phone call.

Safety aspects of walk-downs

Old and new consideration

If we start tomorrow..

Job Safety Analysis (JSA)

Outlines the steps involved in the tasks and measures taken to mitigate risk

Opportunity to go over additional safety measures (including guidelines)

Site specific training beforehand, whether at Houston Area Safety Council (still open and classified as essential and following CDC guidelines) or onsite

Any P&ID drawing sets could be placed in the cloud and downloaded and printed from our home office.

We could meet with facility liaison through video conference or on site. We would adhere to social distancing guidelines regarding safe distance and masks.

Begin walk-downs and only contact operators or facility staff via email, video, or phone for any questions regarding the unit.

Job Safety Analysis (JSA)

Project:	
Facility Name:	JSA Author:
Location:	Supervisor:
Revision #:	Revision Date:

Job Description: Briefly describe the work to be completed.

Sequence of Steps	Potential Hazards	Recommended Actions or Procedures
Task 1		
Task 2		

Job Safety Analysis (JSA)

Task 3		
Task 4		
Task 5		

Personal Protective Equipment (PPE): Check all PPE prior to commencing work. Identify all PPE that is required for the work to be completed

<input type="checkbox"/> FRCs	<input type="checkbox"/> Safety Glasses	<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Chemical Apron
<input type="checkbox"/> Work Gloves	<input type="checkbox"/> Splash Goggles	<input type="checkbox"/> Insulated Gloves	<input type="checkbox"/> Ear Protection
<input type="checkbox"/> Steel Toe Shoes	<input type="checkbox"/> Face Shield	<input type="checkbox"/> Chemical Gloves	<input type="checkbox"/> Other:

Hazard Summary Checklist: Check all hazards that are likely to be encountered during your required work tasks. List the major source(s) of the hazard and describe how

Job Safety Analysis (JSA)

the hazard(s) will be controlled.

Hazard	Hazard Present	Control Method(s) ¹	PPE Required ¹
Welding in Area	<input type="checkbox"/>		
Overhead Work	<input type="checkbox"/>		
Power Actuated Tools	<input type="checkbox"/>		
Potential for Lower Level Falls (Slips/Trips)	<input type="checkbox"/>		
Potential for Upper Level Falls (Stairs, Platforms, Ladders, Etc.)	<input type="checkbox"/>		
Handheld Power Tools	<input type="checkbox"/>		
Heavy Equipment (Pinch Points)	<input type="checkbox"/>		
Same Level Falls	<input type="checkbox"/>		
X-Ray	<input type="checkbox"/>		
Penetrating/Sharp Objects	<input type="checkbox"/>		
Pneumatic Testing	<input type="checkbox"/>		
Lifting	<input type="checkbox"/>		
Repetitive Motion	<input type="checkbox"/>		
Electrical	<input type="checkbox"/>		
Other Mechanical Hazards (Rotating Equip., Etc.)	<input type="checkbox"/>		
Hot Surfaces/High Temp. > 150 F	<input type="checkbox"/>		
Cold Surface/Low Temp. <0 F	<input type="checkbox"/>		
Paint Spraying	<input type="checkbox"/>		
Start-Up Operations in Area	<input type="checkbox"/>		
Flammables	<input type="checkbox"/>		
Toxic Materials	<input type="checkbox"/>		
Reactive Materials	<input type="checkbox"/>		
Asphyxiates - Nitrogen Purges, Etc.	<input type="checkbox"/>		
Open Flames	<input type="checkbox"/>		
Potential Spills	<input type="checkbox"/>		
Other:	<input type="checkbox"/>		
Other:	<input type="checkbox"/>		
Other:	<input type="checkbox"/>		

Job Safety Analysis (JSA)

Available Safety Equipment: Provide the location of each item shown below. If not available, type "N/A" in the field.

Item	Location
Fire Extinguisher	
Eyewash Stations	
Safety Shower	
Telephone	
First Aid Kit	
Spill Containment	
Other:	
Other:	
Other:	

Attachments:

- ☐ Facility Plot Plan - Identify the location of walkdown and evacuation points.
- ☐ Safety Data Sheets (SDS) - Include for all reactants, products, and any intermediate or other chemicals with which exposure is possible.

Additional Attachments: As necessary.

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Safe Evacuation Procedures		
Sequence of Steps	Potential Hazards	Procedure

Job Team Members		
Name	Signature	Date

JSA Review - Employees shall sign on this sheet prior to beginning each day's work which covers the tasks outlined in the above document. The JSA should be reviewed for completeness, accuracy and for any new hazards that may be present on the

Job Safety Analysis (JSA)

worksite. If discrepancies are identified, they should be documented prior to commencing any work in this document.

[illegible]

The walk-down process

1

Job Safety Assessment

Complete JSA

2

Grab current set of P&IDs

Best to start by unit

3

Begin walk down


Green = Delete

Red = Add

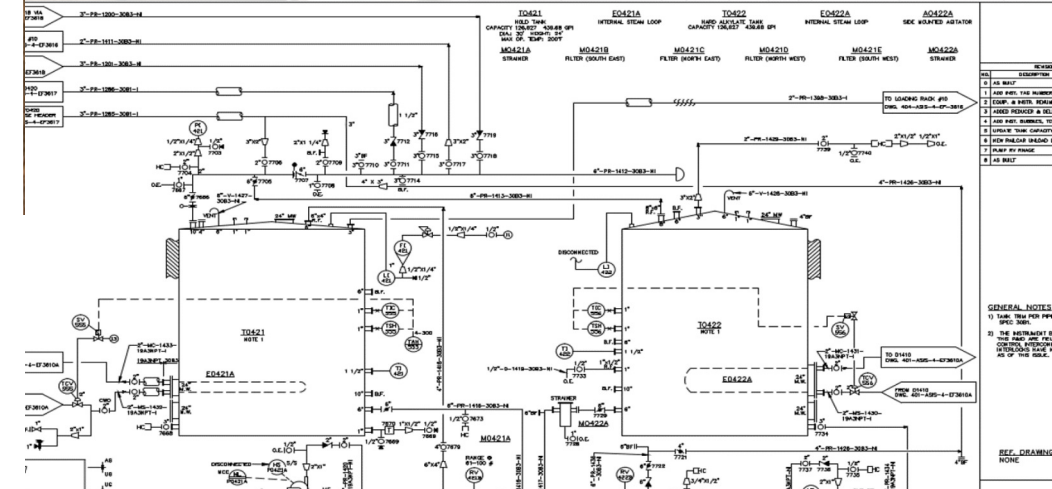
Blue = Notes

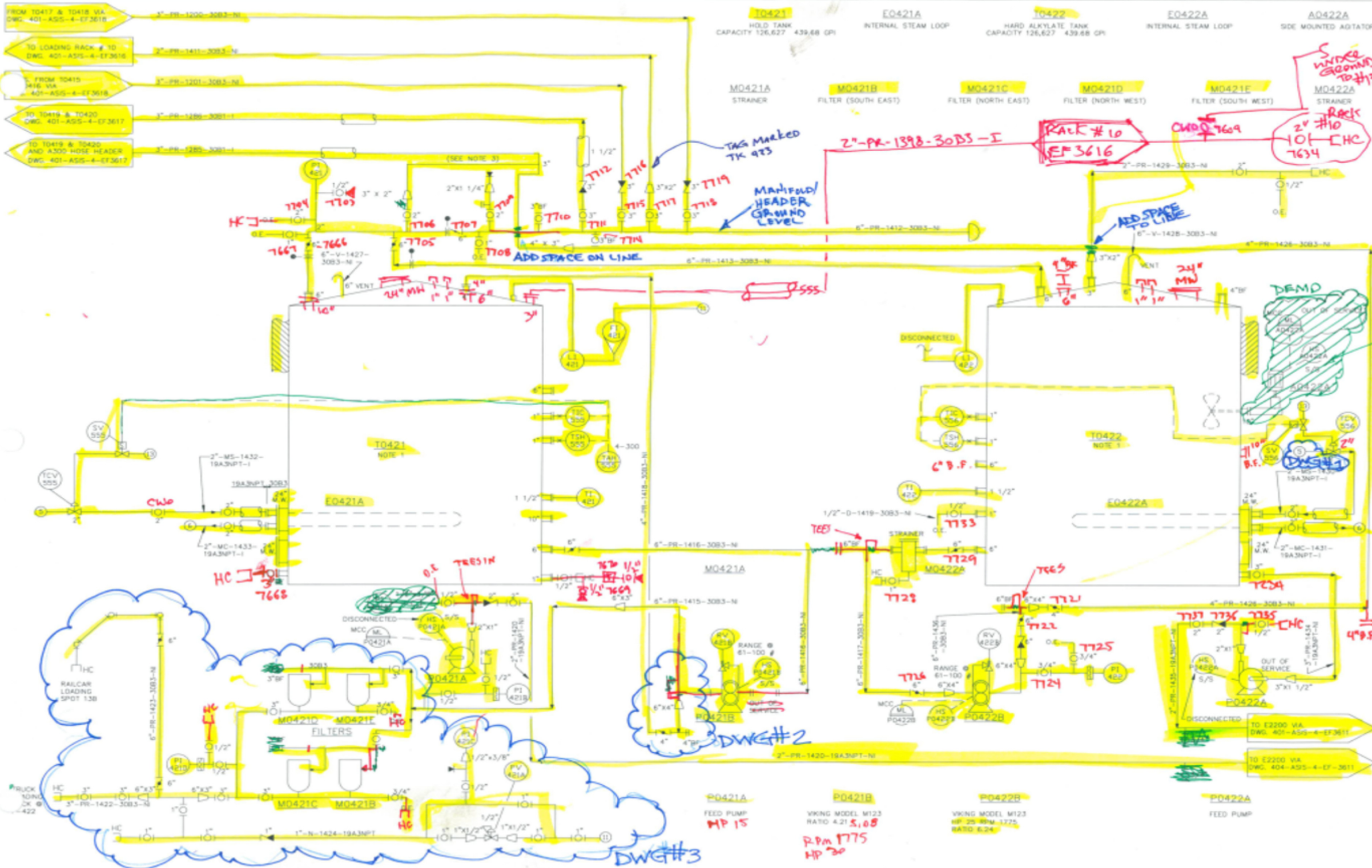
Orange = Check this area

Yellow - Checked



YEAR	2018	SEASON	AUTUMN	PADDOCK		
Plant	Variety	Date Sowed	Qty Sown	Qty Germinated	Date Transplanted	Qty Transplanted
CELERY	TENDER CRISP	9/4	1 TRAY			
BOK CHOY		9/4	1/2 TRAY			
ARZOULI	ALBERT	9/4	1/2 TRAY			
RED ONION	RED RIPP	9/4	2 TRAY			
BROWN ONION	GLADIAN	9/4	2 TRAY			
BIRD CABBAGE	RED	9/4	1/3 TRAY			
CABBAGE	GOLDEN AGE	9/4	1/3 TRAY			
LEEK	BULGARIAN GIANT	9/4	1/3 TRAY			
PINACH		11/4	1/2 TRAY			
TRITUM		11/4	1/2 TRAY			
SPRING ONION		11/4	1/2 TRAY			
PAP CHOY		11/4	1/2 TRAY			
CARFLOWER	INOWALL	11/6	1/2 TRAY			





REVISIONS			
NO	DESCRIPTION	DATE	BY
0	AS BUILT	9/98	JA
1	ADD INST. TAG NUMBERS	10/98	DC
2	EQUIP. & INSTR. RENUMBERED	4/99	JA
3	ADDED REDUCER & OLETE LINE	6/99	JA
4	ADD INST. BUBBLES, TCV'S & SV'S	8/99	JA
5	UPDATE TANK CAPACITY	12/01	JA
6	NEW RAILCAR UNLOAD LINE	10/02	JA
7	PUMP RV RINAGE	2/04	JA

- GENERAL NOTES**
- 1) TANK TRIM PER PIPING SPEC 3081.
 - 2) THE INSTRUMENT BUBBLES SHOWN ON THIS P&ID ARE FIELD VERIFIED. THE CONTROL INTERCONNECTIONS AND INTERLOCKS HAVE NOT BEEN VERIFIED AS OF THIS ISSUE.
 - 3) REMOVE CHECK VALVE FROM 3"-PR-1285 REMOVE 1 1/2" LINE FROM 6"-PR-1412 INSTALL 3" PIPE FROM A300 LINE (1285) TO 2" VALVE (1412) REMOVE BLIND FROM 6"-PR-1413

REF. DRAWING: NONE

DRAWN BY: DJV	DATE: 5/26/98
CHECKED BY: HQ	DATE: 8/98
UPDATED BY: JA	DATE: 3/4/04
APPROVED BY:	DATE:
APPROVED BY:	DATE:

TF5 T0421 & T0422 STORAGE TANKS ENG. FLOW DIAGRAM

SCALE: NONE AUTH. NO:

401-ASIS-4-EF-3610

The CAD/Drafting process

4

Confirm Corporate or applicable standards that will apply

Adhere to those

5

Generate or update new CAD

Take highlighted P&IDs and generate new or update CAD drawings

6

Quality Assurance

Confirm corporate and agreed standards were followed and do final walk-down if feasible





Thank You!



Let Cognascents handle your
P&ID walk-downs start to finish



Summary

P&IDs play a key role in maintaining and modifying the process they describe

Key piping and instrumentation details

Safety and regulatory requirements

Control and shutdown schemes

Basic start-up and operational information

P&IDs should be maintained at all times and constantly updated with any changes

CONTACT US

Let's work together!

Let us serve your
process engineering,
process safety, asset
integrity, and technical
training needs



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