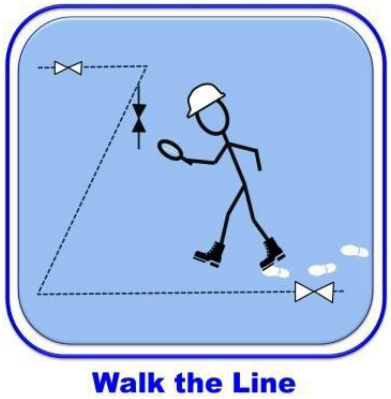
Celanese

The chemistry inside innovation™

Walk the line initiative



Jordi Costa
Corporate Process Safety

Walk the line initiative: Introduction

- Performance on number of incidents is being studied along the year per each site.

- Celanese classifies the following as **Walk the Line incidents** :
  - Open ended line
  - Incorrect line-up

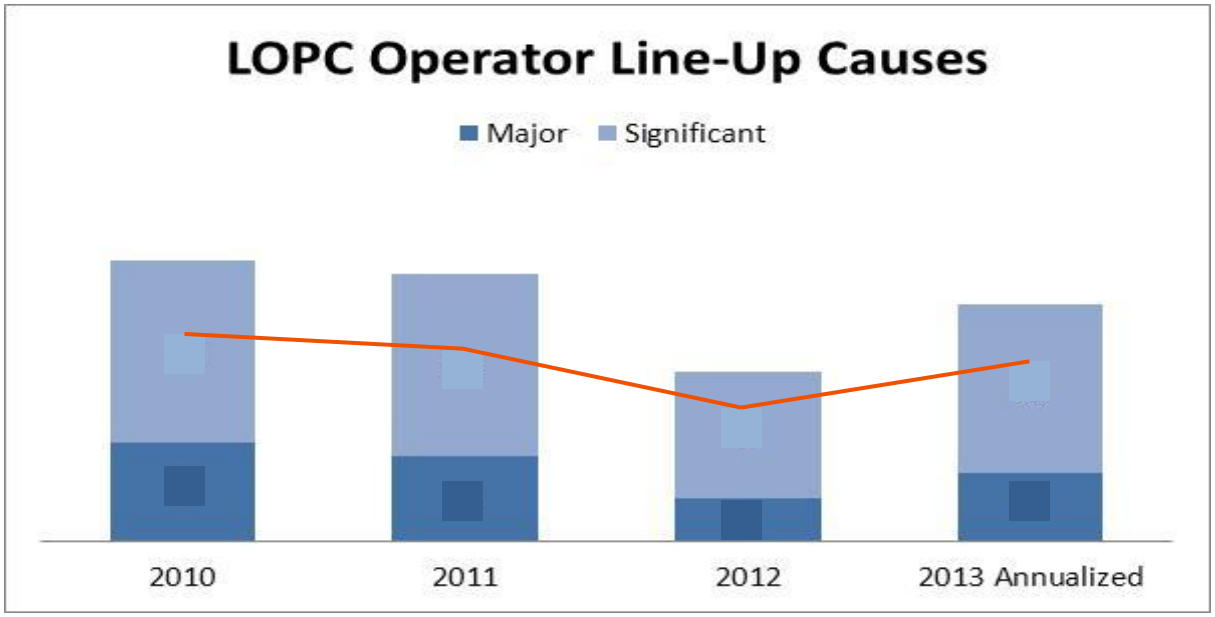
- The Walk the Line initiative rolled out globally in 2013.

What is Walk the Line?

Walk the line is knowing with 100% certainty where energy will flow between any 2 points in a process

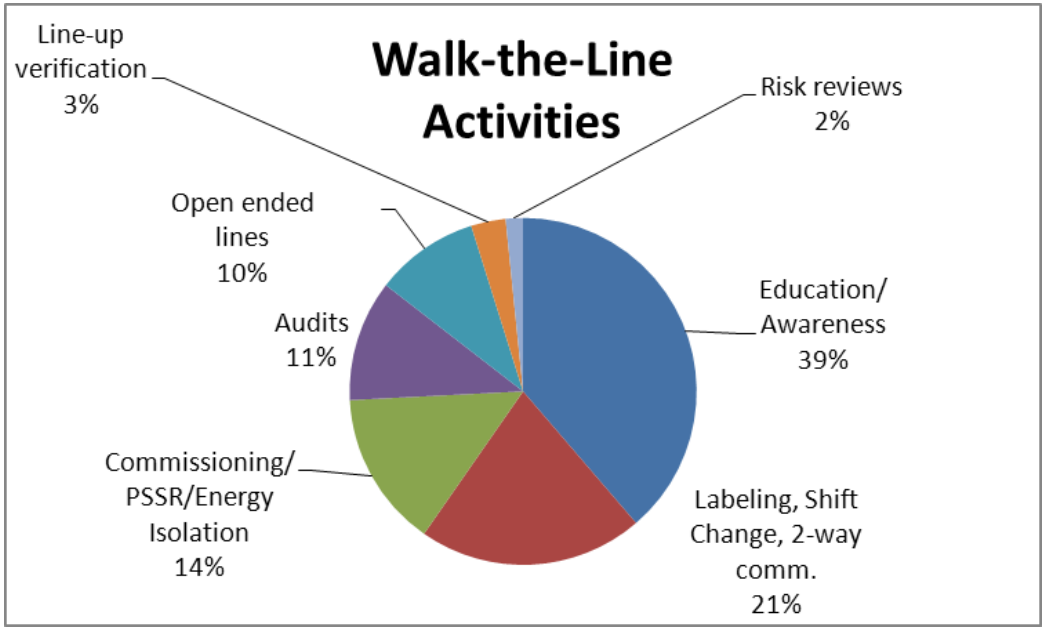
Walk the line initiative: Cause – Action

- Cause: In 2010 & 2011 the number of Loss Of Primary Containment (LOPCs) due to walk the line causes were elevated. These incidents are easily preventable.
- Action:
  1. Conducted regional “conduct of operations (ConOps)“ workshops.
  2. Formed a ConOps global team with site representatives.



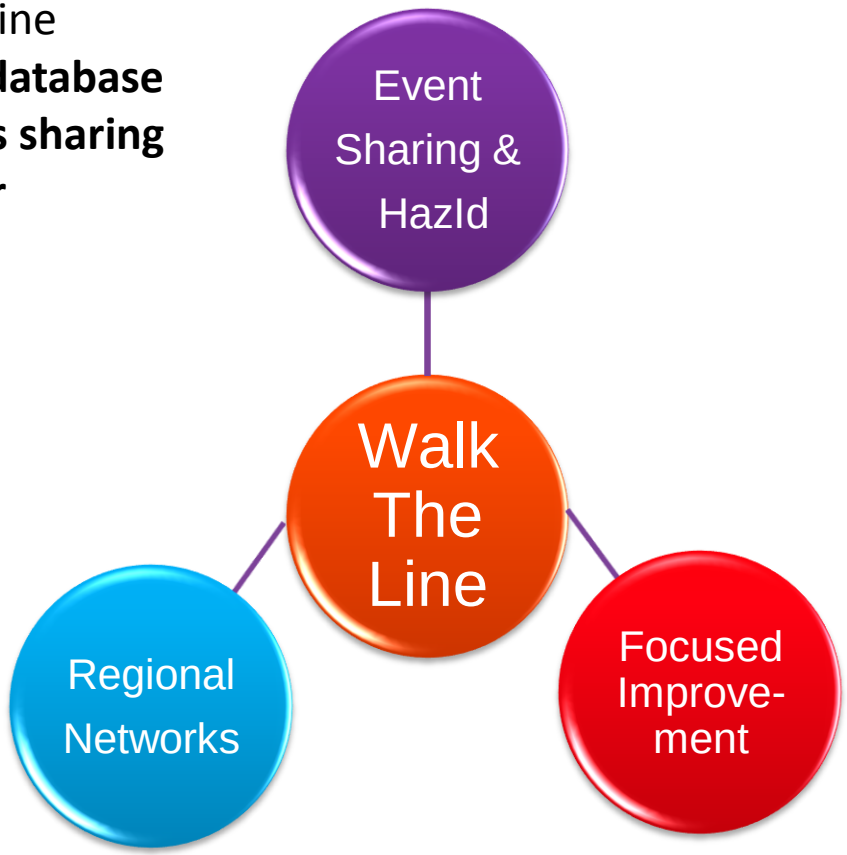
Walk the line initiative: Cause – Action

- Required a cultural change by:
  1. Establish the expectation for operations line-up.
  2. Reinforcing this expectation.
- Sites were required identify and implement improvements in their daily operations and share their projects globally.



Walk the line initiative: Changing Culture

- Walk the Line **incidents database** and **events sharing newsletter**



- Communicate Walk the Line practices throughout the year at the **network meetings**

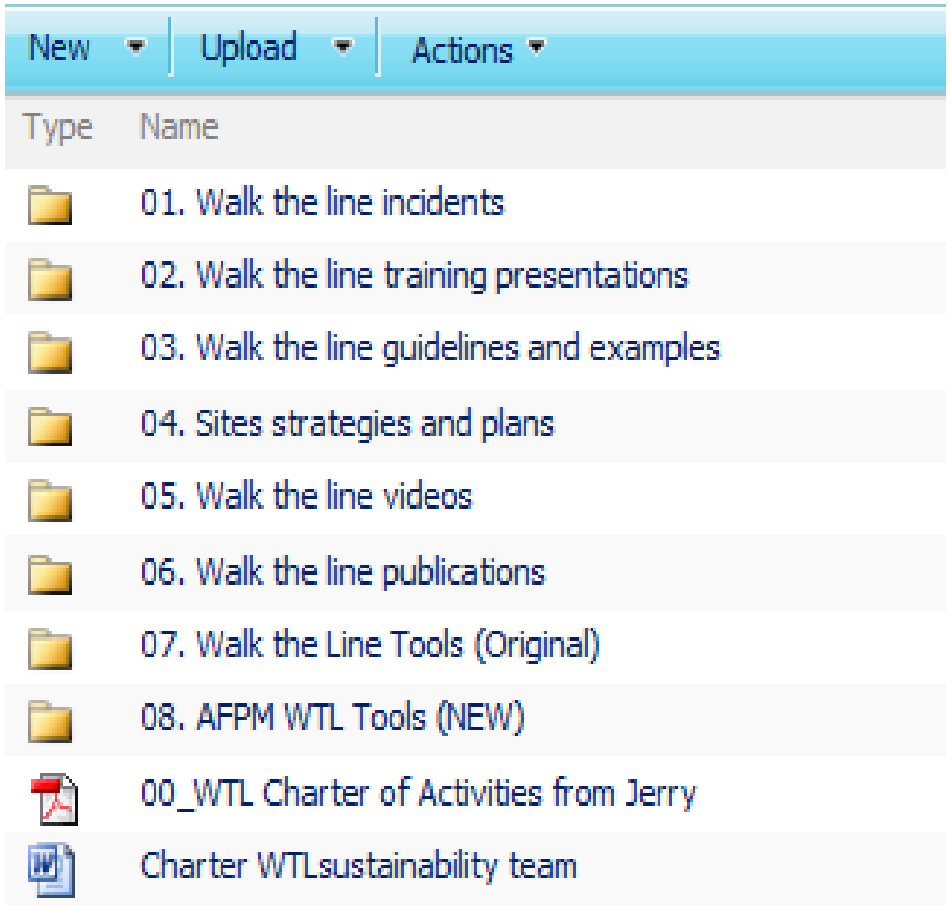
Practice Sharing

- Toolbox guide-sheets
- Training tools
- Operating Discipline practices for shift notes, relief, instructions, rounds, & design practices
- Operational Readiness practices for op/maint turnover, commissioning, start-up

Walk the line initiative: Changing Culture

Celanese

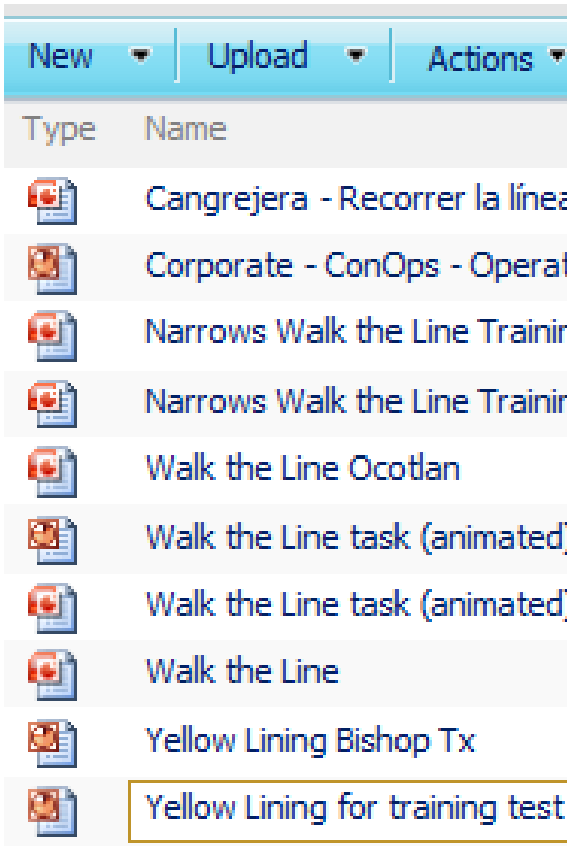
- Created and launched WTL portal to share information and tools to help the sites to eliminate walk the line incidents.



Walk the line initiative: Changing Culture

Celanese

1- Walk the line incidents data base & events sharing:




Vol. 1 | Issue 1 | February 19, 2013 Celanese

One PSM

Event Sharing

Line up error

Even if some of the incidents are 100% preventable, experience tells us that every year occurred. This is the case for operator line up error.

Attached you can see three incidents related to the line up error from other companies. As you can see, common causes of leaving drain valve opened, or open the drain valve in the wrong moment, developed in a LOPC incident. These incidents have already happened in our sites.

What can we do to reduce this kind of incident?

Our SWP PS-021-CE defines the steps to follow to reduce variability in operational practices in order to reduce human error, increase safety and enhance effectiveness.

In the year 2012, CE started a ConOps networking project with the aim that sites could share their ConOps best practices. Moreover, ConOps meetings took place worldwide every quarter in order to discuss some proposed topics from the sites that wanted to share their best practices or asked for support to improve their systems.

Line up error was one of the main points of discussion in the 3Q presentation.

By reading the event, next questions can easily come to us:

- Was this incident already happened in my site or can it happen?
- Do we have the proper measures implemented to avoid this kind of event?
- Could this event be interesting to share with someone of the company?
- Should this event be included in our PSI and study this possible scenario in our PHAs?

Process Safety Performance

0 Major LOPC / 0 Major FEPT YTD

Industry Incidents:

Event 1.4- Release from a bleeder.pdf Event 1.5- Release from a chain pipe..pdf Event 1.6- Release from a chain valve.pc

Examples of line up CE Incidents:

20110617AF5C 20110617F4F3F

20110518A8679 20111019FE755

20110805SCD46 20120504F9C1

Did you know that ...

Line up error was one of the four causal factors that represented the 80% of the overall LOPCs that CE had last year?

And that by itself, represented nearly the 30% of LOPCs in 2011?

One PSM is published by the Global Process Safety group with the purpose of raising process safety awareness for all Celanese employees. To contribute an article or for more information, Email: pedro.carrera@celanese.com (+49) 69 45009 1656

– All Process Safety Incidents are Preventable –

Celanese

ing
en
ll
y
,
hat
n the
jury

o tapes, both of a masking tape type.
y, full of air. Container 2, was full of

ted, valves) the suction and discharge
ge valves, and then, to start up the
es for both containers,. He then started
ntainer 2, full of flake, creating the

changed the physical walk of the

ine type operation.

a valuable tool!

KEEPSAFE

Celanese

2- Walk the line toolbox

Walk the Line Toolbox
What Would You Do?

Instructions:
- Read the situation to your work group
- Let the employees think about the situation for a few minutes
- As a group, let the employees discuss what they would do to make the situation safer
- After the discussion, read some of the suggested solutions

Topic: Walk the Line, Control of Energy, Open Bleeders

Situation: You are starting up a transfer through 2 mix vessels and a filter to a storage tank. It is close to shift change time. This transfer operation has not been previously done on your shift today.

What would you do if you were faced with this situation?

Suggested Solutions:
- **Walk the Line if you are not SURE of control of energy**
- **Ensure you follow any documentation or checklists for equipment check-out prior to restart**
- **Communicate with in-coming and out-going shifts about any material transfers**

KEEPSAFE

Taken from incident titled: #17 Mixer sample port left open – 20130520E35E6
Quarter turn sample valve on discharge of pump left open, resulting in Major LOPC

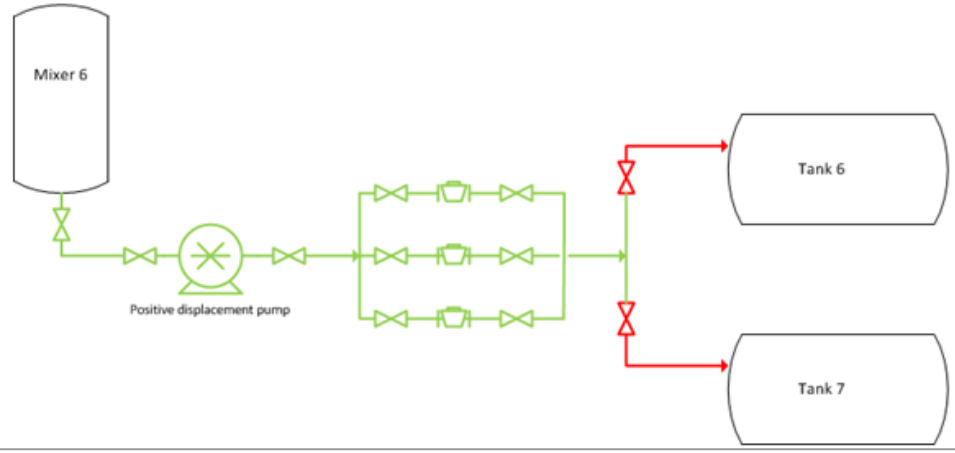
One PSM

Walk the line tool box
What would you do?

Celanese

Instructions:
- Take a look at the diagram, then read the scenario
- Let the employees think about the situation for a few minutes
- As a group, let the employees discuss what they would do to make the situation safer
- After the discussion, read some of the suggested solutions

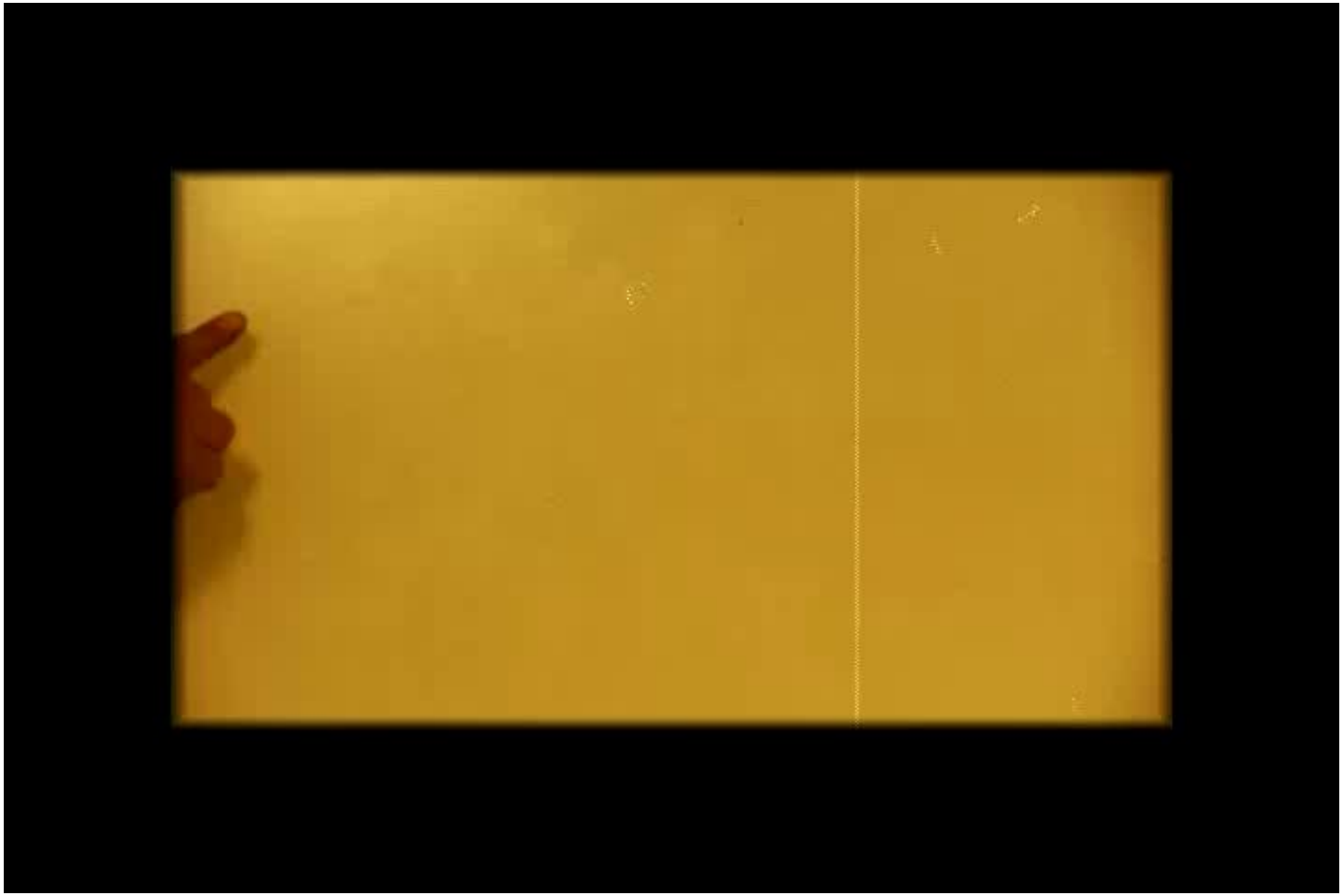
Topic: Walk the Line, Positive displacement pumps, closed valves



© Celanese Presentation Title 1

Walk the line initiative: Changing Culture

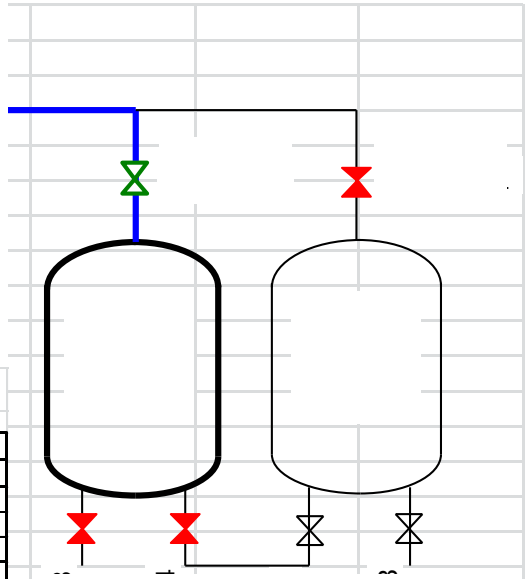
3- Walk the line videos



Celanese

4- Walk the line Best Practices

- SOPs drain valves checking requirement.



TRASIEGO DE R-200 **(R-1)** A R-205 **(C-1)**

EQUIPO	VALVULA	BREVE DESCRIPCION	POSICION		
			CIRCUITO SEGURIDAD	COMIENZO TRASIEGO	FINALIZAR TRASIEGO
R-200 (R-1)	SV.R200.51	Fondo reactor	Cerrada	Abierta	Cerrada
	HV.R200.53	Salida hacia bomba	Cerrada	Cerrada	Cerrada
	HV.R200.52	Desagüe a la canal	Cerrada	Cerrada	Cerrada
F-202 (FR-1)	HV.F202.51	Salida derecha producto filtrado	Cerrada	Cerrada	Cerrada
	HV.F202.52	Evertite manguera	Cerrada	Cerrada	Cerrada
	HV.F202.53	Entrada filtro	Abierta	Abierta	Cerrada
	HV.F202.54	Purga filtro a la canal	Cerrada	Cerrada	Cerrada
	HV.F202.55	Subida lado Norte	Abierta	Abierta	Cerrada
	HV.F202.56	Subida lado Sur	Cerrada	Cerrada	Cerrada
	SV1	Intermedia hacia PVA II	Cerrada	Cerrada	Cerrada
R-204 (C-2)	HV.R204.51	Entrada superior	Cerrada	Cerrada	Cerrada
R-205 (C-1)	HV.R205.51	Entrada superior	Abierta	Abierta	Cerrada
	HV.R205.53	Fondo envasado	Cerrada	Cerrada	Cerrada
	HV.R205.54	Fondo fabricación	Cerrada	Cerrada	Cerrada

Tipo Mowilith:	N° dispersión:	Fecha:	Fecha:	Fecha:
Observaciones:		Hora:	Hora:	Hora:
		Operario:	Operario:	Operario:
		Firma:	Firma:	Firma:

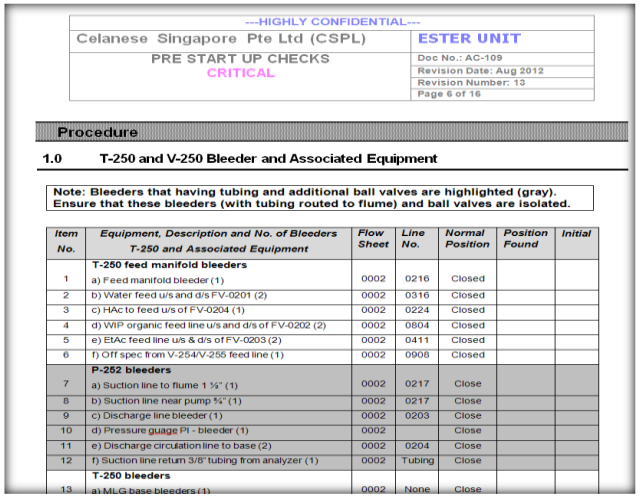
Walk the line initiative: Changing Culture

4- Walk the line Best Practices

- Return spring valves.

- Valves position indication.

- Pre Start-up review.



---HIGHLY CONFIDENTIAL---

Celanese Singapore Pte Ltd (CSPL) | ESTER UNIT

PRE START UP CHECKS
CRITICAL

Doc No.: AC-109
Revision Date: Aug 2012
Revision Number: 13
Page 6 of 16

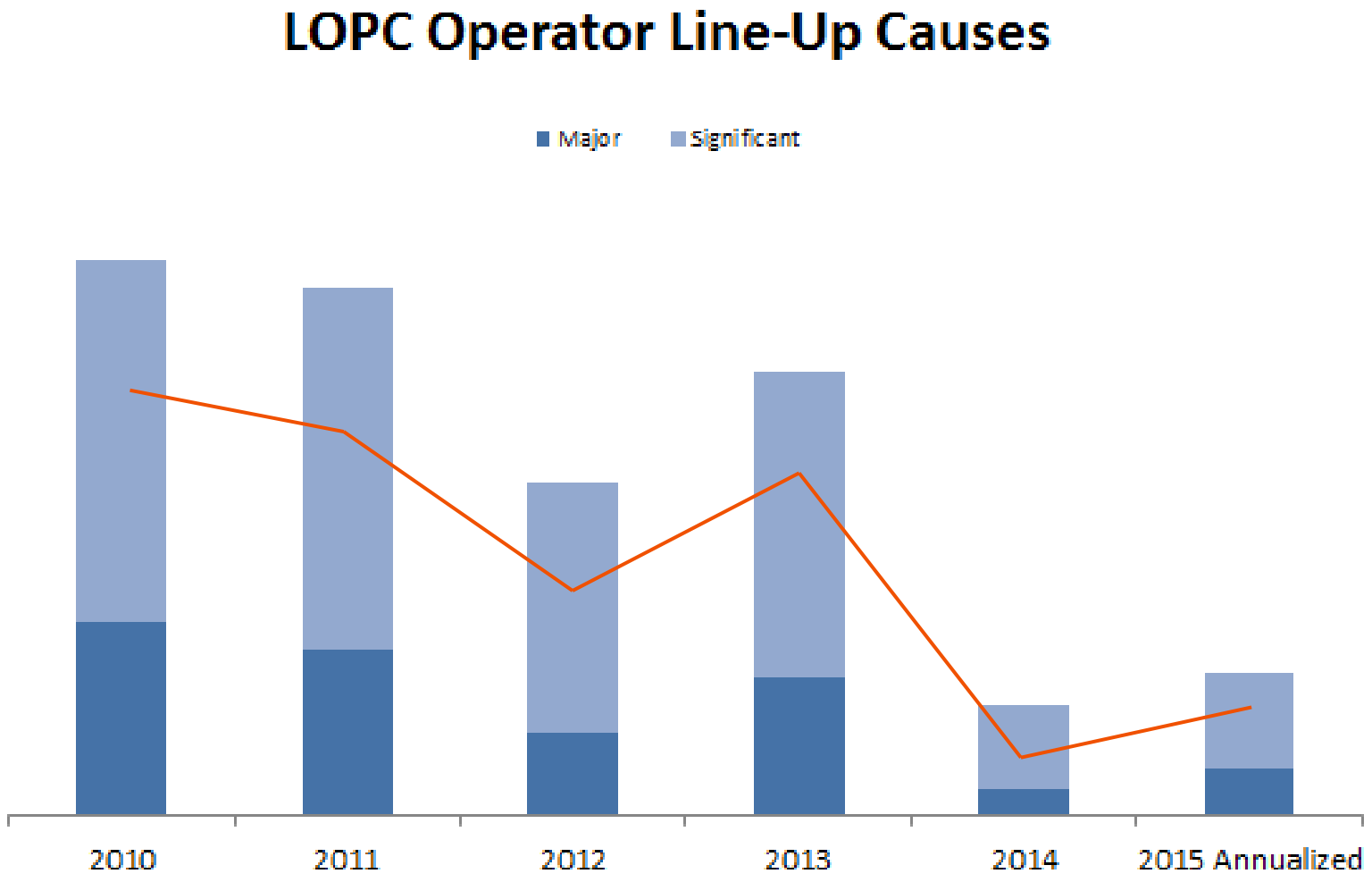
Procedure

1.0 T-250 and V-250 Bleeder and Associated Equipment

Note: Bleeders that having tubing and additional ball valves are highlighted (gray). Ensure that these bleeders (with tubing routed to flume) and ball valves are isolated.

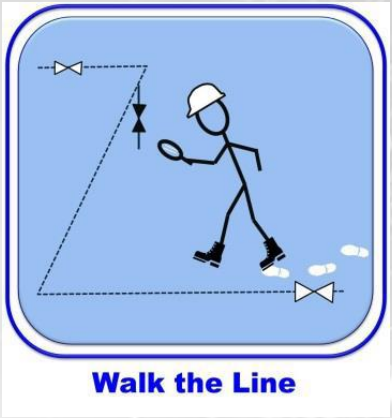
Item No.	Equipment, Description and No. of Bleeders T-250 and Associated Equipment	Flow Sheet	Line No.	Normal Position	Position Found	Initial
	T-250 feed manifold bleeders					
1	a) Feed manifold bleeder (1)	0002	0216	Closed		
2	b) Water feed u/s and d/s FV-0201 (2)	0002	0316	Closed		
3	c) HAc to feed u/s of FV-0204 (1)	0002	0224	Closed		
4	d) WIP organic feed line u/s and d/s of FV-0202 (2)	0002	0804	Closed		
5	e) EtAc feed line u/s & d/s of FV-0203 (2)	0002	0411	Closed		
6	f) Off spec from V-254/V-255 feed line (1)	0002	0908	Closed		
	P-252 bleeders					
7	a) Suction line to flume 1 ½" (1)	0002	0217	Close		
8	b) Suction line near pump ¾" (1)	0002	0217	Close		
9	c) Discharge line bleeder (1)	0002	0203	Close		
10	d) Pressure guage PI - bleeder (1)	0002		Close		
11	e) Discharge circulation line to base (2)	0002	0204	Close		
12	f) Suction line return 3/8" tubing from analyzer (1)	0002	Tubing	Close		
	T-250 bleeders					
13	a) MLG base bleeders (1)	0002	None	Close		

Walk the line initiative: Results



Celanese

The chemistry inside innovation™



Thank you very much.

Questions?

jordi.costasala@celanese.com