ML Line A/B Blockage (HD1/2): Prevention and extend service time

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Participants:

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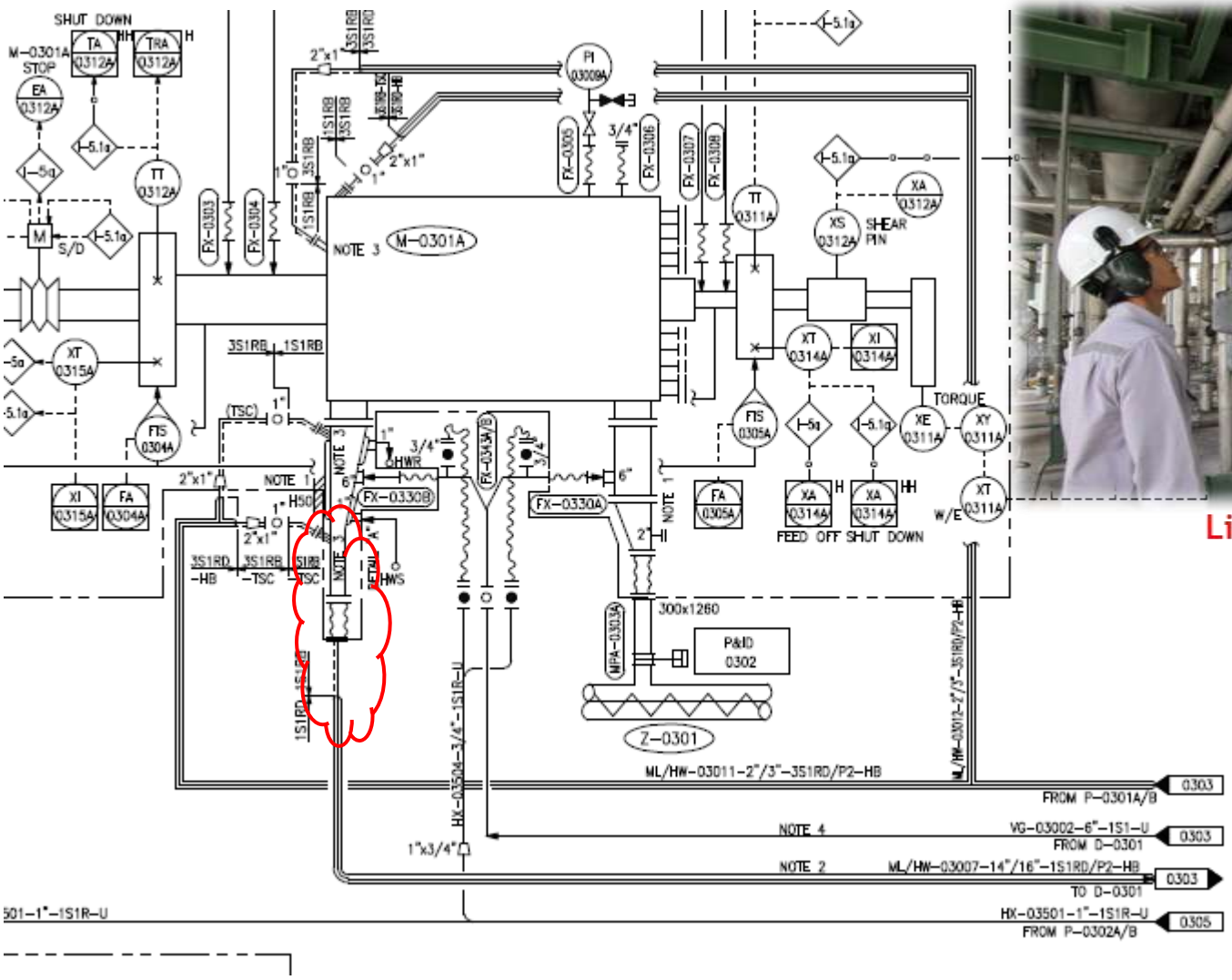
Objective

- To extend service time of ML line A/B from 3 months to 6 months
- To decrease production loss 3,040 Ton/year
- To decrease manufacturing cost from margin loss and cleaning cost of **9,520,000 THB***

*see calculation in slide no. 10

Drawing of ML line



Line B Line A

ML Line Cleaning history

Inspection date	30 Sep 14	7 Jan 15	4 Mar 15	20 May 15
Service date	30 Jun – 28 Sep, 14	30 Sep, 14 – 7 Jan, 15	7 Jan – 2 Mar, 15	4 Mar – 20 May, 15
Service (days)	92	100	54	77
Product sequence	1100J -> 1600J -> 5S -> 5200B -> 6200B -> 3502C -> 6600B -> 7F	6F -> 7F	6F -> 7F	7F-> 1600J-> 2308J-> 2200JP -> 5S -> 5200B -> 6200B -> 3502C -> 6600B -> 6F -> 7F
Product (T)	79,800	86,400	41,600	52,200
Flexible M-0301A	~ 50% Plugged	Plugged ~ 90%	Almost cleaned	Almost cleaned
Flexible M-0301B	> 50% Plugged (More than M-0301A)	Plugged ~ 20%	Plugged 10%	No data
ML line A	Plugged 3 - 7 cm. thickness (~ 20% Plugged)	Plug at near flexible only, but in the line almost cleaned	Slightly accumulate	Almost cleaned, accumulate only at flange
ML line B	~ 30% Plugged higher than M-0301A	Plug at near flexible only, but in the line almost cleaned	Almost cleaned	Almost cleaned, accumulate only at flange
%Load M-0301A/B	50/50	46 - 48/52-54	50/50	48/52
Remark	30-Jun-14: M-0301A L/O leak at gear side	17-Dec-15: M-0301A Motor abnormal sound, vibration > 9 mm/s		

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Product (T)	79,800	86,400	41,600	52,200
Flexible M-0301A	 50%	 80%	 <5%	 <5%
Flexible M-0301B	 >50%	 20%	 10%	No Data
ML line A	 20%	 10%	 <5%	 <5%
ML line B	 30%	 10%	 <5%	 <5%
Steam tracing Line A / B	No data	 	 	 

Summary

1. Production sequence should not be the cause of ML line blockage
2. Service period of ML line A/B is around 3 months (max. 100 days)

   From 2 latest – service periods, ML line is almost cleaned (ML line blockage is only 5-10%), this might be from insulation in Jan 2015

This is the sign that ML line service can be extended.

ML Line A/B

ML Line	Line A	Line B
Flexible		
Flange to ML line	 3 rounds of steam tracing	  No steam tracing (only insulation)

Action

Activity	RP	Status
1. ปรับปรุงการพัน steam tracing ที่ flexible ทั้ง line A/B	Chuchat M.	Done 17 Jun 15
2. เก็บข้อมูล temp. ที่ flange ของ Line A/B เปรียบเทียบก่อน, หลังปรับปรุงการพัน steam tracing	Suriya T.	Done 22 Jun 15
3. ติดตามผลภายหลังการปรับปรุง steam tracing และนัดประชุมอีกครั้งในเดือนกันยายน 2558	Saowani L.	

Follow up

1. compare temp at flange Line A/B

Before improvement

Flexible M-0301A

- It has steam tracing more than M-0301B (16 round)
- Temperature at flex ~68 °C

Bottom flange of flexible M-0301A

- It has steam tracing but no has inside insulation cover
- Temperature at bottom flange ~68 °C

Flexible M-0301B

- It has steam tracing 7 round
- Temperature at flex ~57 °C

Bottom flange of flexible M-0301B

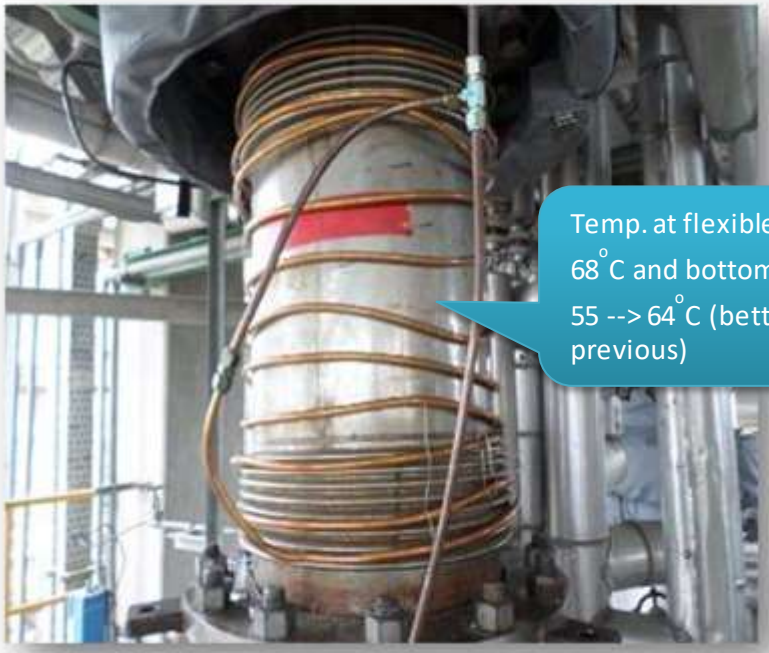
- No has steam tracing but it has inside insulation cover
- Temperature at bottom flange ~55 °C

Follow up

Action 2. Improve steam tracing of ML line

Line A

Line B



Calculation

Basis:

1. To decrease ML line cleaning 4 to 2 times/year (included Annual SD)
2. ML line cleaning cost 200,000 THB/time
3. Downtime to clean ML line 40 hr/time
4. Margin ref. grade (HD7000F) 100 USD/Ton-PE (1USD = 30 THB)
5. Production rate = 38 T/hr

Calculation:

1). Product loss = 38 T/hr x 40 hr = 1,520 T/time x 2 times SD = **3,040** T/year

2). Margin loss = 38 T/hr x 40 hr x 2 times SD x 100 USD/T x 30 THB/USD = 9,120,000 THB/year

3). ML cleaning 2 times/year = 2 x 200,000 = 400,000 THB/year

Cost saving from decreasing 2 time/year of ML Line SD = Margin loss + Cleaning cost

= 9,120,000 + 400,000 = 9,520,000 THB/year

Project Team

THANK YOU FOR YOUR ATTENTION