

SUT Evening Technical Meeting

Pre-Commissioning & Start Up Issues – Integrity

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Transition – Construction to Production

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The Australian economy—supporting the transition

Robert Dolamore, Economics

Key issue
With resources sector investment probably having peaked, other sources of demand will need to strengthen if the economy is going to grow at a rate consistent with full employment. How smoothly this transition unfolds will have important implications for Australian living standards. Economic policy can play an important role in supporting this transition.

As the Australian economy moves into the production phase of the mining boom a significant transition is underway. With resources sector investment probably having peaked, other sources of demand will need to strengthen if the economy is to grow at a rate consistent with full employment. A smooth transition from one set of growth drivers to another is not guaranteed, subject as it is to the influence of changes in global economic conditions and consumer and business confidence. Economic policy can play

WA Country Hour By Tara de Landgraaff

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Updated 27 Mar 2015, 11:50am

The party is almost over for Western Australia's resources boom.

That is according to Deloitte access economics, which has been crunching the state's latest economic data.

Leader of the WA practice, Matt Judkins said while it has been known for some time that the mining industry was changing from a construction to production phase, it has taken the economy some time to catch up.

And he said while that meant more exports were on the cards in the long term, it would also mean

SYMBOL	BID	OFFER	LAST	VOL
AUREX	0.071	0.072	0.072	7T
AURIDIAM	0.045	0.05	0.05	0
AUS GROWTH	0.84	0.85	0.85	6T
AUS MINING	0.039	0.04	0.04	3HT
AUS SILICN	0.047	0.059	0.059	60T
AUS VISUAL	-	-	0.028	0
AUS.FOUND.	3.34	3.35	3.34	2HT
AUSDRILL	0.69	0.70	0.69	2HT
AUSGRO LTD	-	-	0.091	0
AUSGROUP	0.70	0.71	0.70	67T
AUSMELT	0.75	0.80	0.75	58T
AUSPINE	3.05	3.08	3.05	34T
AUST AC CO				

PHOTO: The Australian stock exchange (ABC TV)

MAP: Esperance 6450





The Navy who had an Integrity Issue



Lessons Learnt

So what is the difference between typing up lessons learnt and trying to teach lessons learnt ...

in the former case, you only have to punch the lessons in once.



The Invitation, the Offer & the Strategies

Invite you to enter into conversations with your colleagues and your management about how to avoid integrity pit falls during pre-commissioning and start-up.

Offer my opinion on what makes integrity management in the early phase of the project challenging.

Suggest strategies to address these challenges.



Disbonded FBE Coatings



Long term storage of coated pipe in high humidity conditions can result in poor adhesion between the FBE and the pipe.

Coating blisters when field joint coatings are applied.

FBE varies in quality and performance.

Selection, selection, selection.



Chemical Performance



To test or not to test, this is the question.

A mature chemical supply industry has been supplying chemicals for decades, surely the science must be well defined by now?

Is the chemical shoot out in the laboratory the way forward?

The number of degrees of freedom is large – so how can they all be covered?

Unfortunately for all parties concern there is plenty of room for unpleasant surprises.

Independent testing is the solution for good solutions.



Injecting the Chemical



The unwanted telephone call goes ...

We might have been a little light on chemical dosage during filling but the good news is we made up for the shortfall later. Diffusion will take care of this won't it?

Sadly in many cases it won't, we just don't have the time.

Don't get infected, check your injector.



Wet Parking – Mission Impossible?

Your mission, that you must accept, is to park the pipeline for 12 months, with a possible extension of 48 months, or longer, and have it fit for service despite the pipe wanting to self destruct by the time this message is delivered.



For IMF¹ agents its easy-peasy, but for the rest of us a JIP is what we need.

1 Integrity Management Force



Clean up to Host

A new last minute idea, lets reduce risks and clean up the wells up to the plant (host).

Include a temporary cleaning facilities at the plant as part of the basis of design.

Life can be messy, so make sure your ready.



Make Sure You Can Flush



No matter how careful you are someone is going to allow something into the pipe that you don't want.

Having the ability to flush the entire pipeline, including the tree pipework can save you a lot of time and money.

Help the designers to see the need.

If at first you don't succeed keep flushing.



Do we have to Flood Now?

Dry pipes don't rust.

But hydrostatic testing by its nature is a wet process.

Commercially we cannot postpone hydrostatic testing.

Operationally we cannot handover pipelines that are filled with chemically treated water.

Seek lots of corrosion allowance for pre-com and use the commercial objections to seek better hydrostatic testing scenarios.

Rust sleeps if you keep it dry, but if its wet keep it wet.



Exotic Materials – Always Wonderful?

Exotic Materials don't generally corrode but they don't always live up to our expectations.

Pit and self corrode.

They are exotic so their properties are less well understood.

Create unexpected galvanic cells where the cathode becomes the location of material failure – an exotic failure!

Test exotic materials exotically and extensively.



I Like Aeroplane Jelly



If only we had gels that could support their weight life would be easier.

We need to encourage research into developing new gels, there not just for pigging.

Gels - the thick solution.



Start-Up – The Best Laid Schemes of Mice and Men

New ideas and new authorities will influence the final start-up strategy.

New situations arise that weren't foreseen.

Good field data will be available for the first time so integrity efforts can be focused.

A can do attitude, flexible approach and good support from subject matter experts will give the project the lift it needs.



The Challenges



1. Initial hype at the start of the job often leads to potential issues being treated with a broad brush.
2. Cost and schedule are taskmasters that are overwhelmingly powerful and integrity issues don't bite until long after the project is complete.
3. Error will arise.
4. Limited field data.
5. Some risks with time seem to shrink on their own without any mitigation only to arise later to bite hard.



Key to Success

1. Employ and engage those managers who will head up Integrity Management of Operations at the very start of the project.
2. Sound contingency planning.
3. Design to maximise flexibility to accommodate the unknowns.
4. Don't forget your initial response to the risk.
5. Be strong and hold your ground.



My Hope

If you successfully manage integrity with time complacency will re-establish itself,
so may the lessons learnt by others motivate and maintain your diligence.



Questions

