

# IRP21: It's Almost Over

2010 ICoTA Roundtable



# IRP21 Coiled Tubing Operations

## Why Did We Write It?

- Driven by events
- Suggested by various regulatory bodies
- We did have a choice
  - ‘We’ could write this or let ‘them’ write it for us



# IRP21 Coiled Tubing Operations Must, Shall, Should

- What do they mean??
- Enform have new IRP protocol for this

## **RANGE OF OBLIGATION SPECIFIED IN THIS IRP**

This IRP uses the following terms to identify the various levels of obligation or requirement related to coiled tubing operations:

Term	Usage
Must	A specific or general regulatory and /or legal requirement
Shall	An accepted industry practice or provision that the reader is obliged to satisfy to comply with this IRP
Should	A recommendation or action that is advised
May	An option or action that is permissible within the limits of the IRP
Can	Possibility or capability

Every effort has been made to ensure the accuracy of the data but readers must consult the appropriate regulatory documents to ensure compliance.

# IRP21 Coiled Tubing Operations

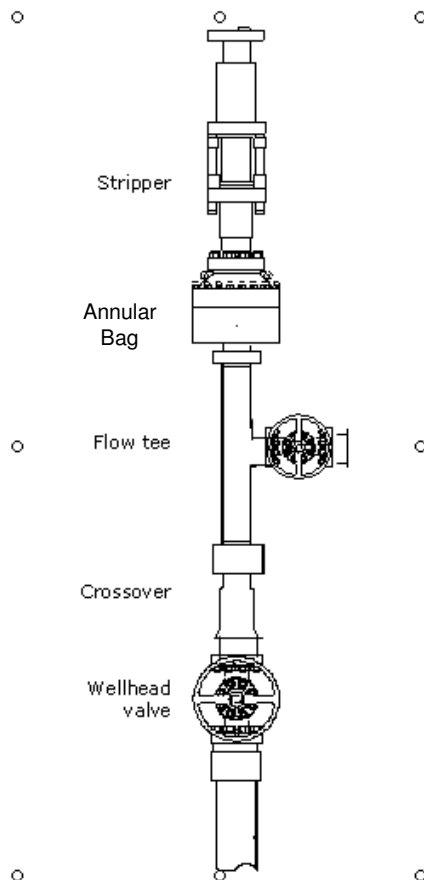
## Must, Shall, Should

- So, how many??
- Must                    144
- Shall                    325
- Should                   239

# IRP21 Coiled Tubing Operations Shallow CT

- There is no such thing as Shallow CT in IRP 21
- Is a set of requirements for working on Class 1 wells
- What is currently 'accepted' as a Shallow CT unit will be able to work on Class 1 wells but.....

# IRP21 Coiled Tubing Operations Shallow CT



- Well control systems for Class I servicing operations using CT shall contain a minimum of one pipe sealing element in addition to the coiled tubing stripper
- Subject to Section 2.1.6: Check Valve/Tubing Shutoff Device Considerations, a single check valve or float assembly is required on Class I servicing operations

# IRP21 Coiled Tubing Operations CT Pipe

- No butt welds in Critical Sour Wells
- Welding must be done by certified welder unless Class I.
- Welds must be inspected.
- Butt welds must be de-rated for fatigue

*Table 8: Butt Weld Fatigue Limit*

<b>Butt Weld Type</b>	<b>Allowable Fatigue</b>
Uniform wall thickness - orbital	45%
Uniform wall thickness - manual	35%
Different wall thickness - orbital	25%
Different wall thickness - manual	15%



# IRP21 Coiled Tubing Operations

## *BOP Certification*

- Everything from the wellhead to the stripper has to be shop serviced on a 3 yearly schedule
- Shop servicing in line with that required in Directive 36, Appendix 5.
- This includes stripper, lubricator, riser, flow T, etc.

# IRP21 Coiled Tubing Operations BOP Certification

## Shop Servicing Requirements

The following procedures are the minimum requirements for shop servicing BOPs, drill-through spools, drill-through adapter flanges (and flexible bleed-off and kill-line hoses where applicable):

- All mechanical and hydraulic components must be completely disassembled and cleaned.
- During disassembly, an identification system must be employed so that all of the unit's component parts are traceable.
- The received condition of the equipment and all repairs required must be recorded.
- Each component must have written specifications for acceptable condition approved by the OEM or a certifying P.Eng.
- All wearing components must be measured with calibrated and traceable measuring and testing instruments, and the measurements recorded.
- Non-Destructive Testing (NDT) must be performed and recorded by an individual with a minimum CGSB Level II (according to OEM specifications or a P.Eng.'s written procedure).
- Each component repaired must have written inspection criteria, sizes, tolerance, and part numbers, as well as written repair methods, including welding procedures, heat treatment, and parts standards approved by the OEM or a certifying P.Eng. Reference must be made to the appropriate API, ASME, and AWS standards. All repairs completed must be clearly identified on the repair report.
- All elastomers must be replaced, with the exception of the annular packing elements and ram rubbers, which are at the discretion of the "certifying party." (Certifying party is defined as an OEM-designated representative, a certifying P.Eng., or a designated person with industry experience approved by a P.Eng.)
- Parts replaced or added to the BOPs, including elastomers, must be traceable and designed for the purpose with equivalent or superior performance and must be approved by the OEM or a certifying P.Eng. All parts replaced are to be clearly identified on the repair report.

# IRP21 Coiled Tubing Operations

## Well Servicing Well Control: Class III/Class B

- Accumulator 15 m or as per jurisdictional requirement from well (currently this means 25 m)
- Independent (i.e. separate hydraulic pump and hydraulic reservoir) of the unit hydraulics.
- Remote operating control 25 m from well

# IRP21 Coiled Tubing Operations

## Well Servicing Well Control: Class III/Class B

- Accumulator 15 m or as per jurisdictional requirement from well (currently this means 25 m) – WHY SAY 15m IF IT MEANS 25m!!!!
- Drilling (Directive 36) is 15m. Why is it OK to drill the well with 15m spacing and then when completed it has to be 25m?
- ERCB willing to listen to a reasoned proposal to change Well Servicing to 15m. BC????

# IRP21 Coiled Tubing Operations

## Other Well Control Issues

- If shear ram installed must be capable of shearing the CT pipe and any internal / external hardware (wireline, umbilicals, etc).
- In cold weather heating of BOP (or other appropriate actions) must be considered to ensure response time and sealing efficiency are not compromised
- Contractor must have (and adhere to) a criteria for retirement of CT string

# IRP21 Coiled Tubing Operations

## Other Well Control Issues

- In sour wells BHA down to at least the check valves must meet the requirement of NACE MR0175 / ISO15156
- When performing BOP Drill the slip rams should not be closed on the CT string due to the potential of H<sub>2</sub>S damage at later time
- Check valves need to be pressure tested

# IRP21 Coiled Tubing Operations

## Pressure Testing of Well Control Equipment

- Yes – you need to do it!
- Stump test acceptable but must be
  - . On location
  - . Pressure test required on connecting flange
- Low (1400 kPa) and High (max potential SITHP) tests required.

# IRP21 Coiled Tubing Operations

## Well Control Ticket

- Well Servicing – CT Shift Supervisor / Senior Operator need to have the CT Well Servicing BOP ticket
- Consultant *shall* have it too
- CT Drilling
  - CT Shift Supervisor - First or Second Line Ticket
  - CT Supervisor – Second Line Ticket

*Rough equivalency Shift Supervisor = Driller / Supervisor = Rig Manager*



# IRP21 Coiled Tubing Operations

## Critical / Special Sour Wells

- Anyone operating unit must have relevant BOP ticket
- All CT supervisory people on location must have experience on similar sour (but not *Critical Sour*) well
- Supervised five wells with operations of similar complexity and depth while in sour zone
- With possible exception of point 1 this requirement is virtually the same as currently exists in IRP2

# IRP21 Coiled Tubing Operations

## Current Status

- Approved at September 22 DACC Meeting
- CT Sections of IRP2 (Critical Sour Well Servicing) and IRP6 (Critical Sour UBD) should be removed.
- At some future time ERCB intend to include the majority of Section 2 (BOP stack/accumulator requirements) in a revised Directive 37.

# IRP21 Coiled Tubing Operations

## Can We Change It?

- Each IRP reviewed on a 3 yearly cycle
- Only re-opened if necessary
- If you wish it reviewed let appropriate body know (ICoTA, CAPP, etc)

OR

# IRP21 Coiled Tubing Operations

## Can We Change It?



# IRP21 Coiled Tubing Operations

## Questions?

Thanks go to everyone who has helped with the IRP.

**“Any change, even a change for the better, is always accompanied by drawbacks and discomforts.”**

(Arnold Bennett, British novelist, playwright, critic and essayist)