CSW Development

Before the CSW was introduced, typical platform wellheads allowed for one well per slot. Each well could produce from multiple zones, but if one zone needed workover, the entire well was worked over. These systems used flanged connections and spool-type wellheads.

Next, unitized wellheads incorporated casing and tubing stages within a common housing. This reduced the number of connections and was more economical. However, these systems could accommodate only one well per conductor.

In the early 1990s, systems were introduced allowing two wells to be drilled in one conductor. These systems utilized spool-type wellheads, separation was downhole and both wells were drilled and completed simultaneously.

Today, the Cameron CSW offers a combination of systems which allow up to three independent dual completions in one conductor. Each well can be drilled and completed independently, the number of connections is minimized, the system is compact, safe and field proven. The best of all solutions.

The Cameron CSW System integrates two or more wellhead systems into a single conductor. Major benefits include:

- Smaller platform sizes and maximized use of existing platform slots.
- Lower site development costs in land applications.
- Reduced installation times.
- Independent drilling and completion of each well allows well access with decompletion of the adjacent well.
- Commitment to the second (or third) well is not necessary at the same time as the first well.

Field-Proven Technology

Cameron has installed a large number of CSW systems in various parts of the world. These include the first ever installation of both a single and dual completion in a 30” conductor. Future installations call for three dual completions inside a 36” conductor and two 9” completions in a single conductor.

The success of Cameron’s CSW wellhead system lies largely in its use of standard components and other Cameron-exclusives such as the CAMFORGE™ and SlipLock™ Connection Systems which provide quick make-up connections without welding.

SSMC Wellhead Reduces Height

The CSW wellhead uses standard components from Cameron’s highly successful Standard Snapring Modular Compact (SSMCM™) Wellhead System. All components above the surface casing strings are standard, field-proven SSMCM components including the casing hangers, seal assemblies and tubing hangers. The unitized CSW housing allows for installation of the casing hangers, seal assemblies and tubing hangers in a single housing. In addition, all equipment on each completion is identical, reducing inventory, saving on installation time and reducing potential operational problems.

Fast Make-Up, No Weld Connections

Cameron’s CAMFORGE and SlipLock connection systems are used on the CSW wellhead to reduce installation time and eliminate the need for welding. The popular CAMFORGE system uses a “cold forging” technique to secure a metal-to-metal connection that makes installation fast, safe and economical. The SlipLock system uses a simple slip-type mechanism to replace conventional casing threads or slip-on preparations, which require field welding.
11" Nominal CSW System

SSMC Tubing Hanger

CSW Housing with CAMFORGE Bottom Connection

SSMC Casing Hanger

SSMC Seal Assembly

4½" Bore Block Christmas Tree Valve

30” Conductor
13¾” Wall Centralizer
9¾” Casing
7¼” Casing
4½” Tubing

11” Nominal CSW System
Tubing Head Adapter
SSMC Single Tubing Hanger
SSMC Seal Assembly
SSMC Casing Hanger
13 5/8" CSW Housing with SlipLock Bottom Connection

Diverter Housing
SlipLock Connector

Emergency Standard
SSMC Emergency Seal Assembly
SSMC Emergency Slips

Emergency

36" Conductor
13 3/8" Casing
9 5/8" Casing

13 1/4" Nominal CSW System
Cameron Conductor Sharing Wellhead systems can save up to 20% on individual well costs. Additional savings can be realized from reduction in platform size and more efficient use of well conductor slots. Cost and efficiency savings come from the following benefits of the Cameron CSW:

**Optimized Platform Space**
- One, two or three independent wells in each platform slot.
- Each well may contain single or dual completion.
- Compact design does not require multi-level platform.

**Reduced Rig Time**
- Drilling and completion are independent between the wells.
- Commitment to second (or third) well is not required prior to spudding first well.
- Each well can be worked over independently.
- Fewer connections than spool-type wellhead.
- Conventional drilling and completion procedures.

**Enhanced Safety**
- Reduced number of BOP connections.
- Through BOP/diverter operations.
- Fast make-up, weldless CAMFORGE and SlipLock connectors are available.

**Reduced Inventory**
- Identical components for each well.
- Modular design, interchangeable components.
- Single compact housing for each well.

**Flexibility**
- Wide range of casing programs available.

**Field-Proven**
- Uses popular Cameron Snapring Modular Compact (SSMC) Wellhead systems on each well.
- Many CSW systems installed and operating in different areas of the world.

Cameron CSW Systems accommodate two or more wells with any combination of single and dual completions.

Typical CSW Installation Features

1. The centralizer for the first well is installed.
2. Both well centralizers are installed.
3. Drill out for surface casing with diverter control.
4. Riser installed for second well against completed first weld.
5. Camforge CSW housings installed on both sides.
6. Both wells completed with 4116 5000 psi WP valves installed.
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