**CHALLENGE**
Ensure long-term well integrity on mature assets in Bass Strait despite limited equipment information.

**SOLUTION**
Implement a comprehensive program to optimize documentation control, as well as wellhead refurbishment and maintenance.

**RESULTS**
Increased safety and uptime and extended life of assets through focus on critical equipment management.

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Operator sought to maintain long-term integrity of 19-platform development

A major operator wanted to improve the management of its aging fields in Bass Strait. As production declined, detailed wellhead equipment information was required for workovers but was often not readily available. In collaboration with Cameron, the operator implemented a comprehensive initiative to manage well integrity, maintain production, and uphold its objectives of safety and environmental protection for its 19-platform development.

**Cameron provided comprehensive equipment and data management services**
Phase one of the well integrity initiative consisted of surveying approximately 380 wells, correlating the information, and manually compiling it. Over a 6-month period, Cameron surveyed hundreds of items of installed wellhead equipment. Bills of material (BOMs) and drawings were sourced from various parts of the world to correlate the surveyed part numbers with the relevant documentation. Approximately 98% of the equipment was traced back to an original equipment manufacturer (OEM), part number, drawing, and BOM. A four-member team then spent a year compiling a wellhead manual for each well.

The next phase involved implementation of extensive refurbishment and maintenance programs. The wellhead manuals are updated when any wellhead equipment is replaced. Failure reports are produced for all refurbished equipment and material changes are made following evaluation of the reports, enabling the operator to refine material specifications. Over the years, the operator has made several specification amendments as new and improved materials have become available. Without relevant documentation control, such revisions to specification could potentially create a hazard. Cameron service technicians are regularly deployed to assist in the documentation of assets to ensure that proper inventory is maintained and traced at all times.

Because wellheads, valves, and chokes are subjected to potential erosion and corrosion from extended periods of wear, the offshore wellhead maintenance program was upgraded to include general greasing every six months and major maintenance (including seal testing and valve cavity greasing) every year.

**Focus on well integrity, improved safety, and uptime**
The initiative to increase control over documentation and wellhead equipment refurbishment and place greater emphasis on offshore wellhead maintenance has paid off. Engineering times have reduced because of the availability of easily accessible, accurate wellhead information; safety and confidence in the wellhead equipment offshore have increased; and rig downtime associated with incorrect or incomplete wellhead data has decreased.

Wellhead manuals are used daily by workover, drilling, and surveillance engineers. They have also proved invaluable when pressure testing wellhead seals and validating reports from wellhead manufacturers during and after their offshore operations. All new wellhead equipment purchased is accompanied by documentation from the manufacturer conforming to the format of these manuals.

The operator has seen increased system uptime resulting from integrated support through a comprehensive maintenance and asset management system specifically designed for equipment and performance monitoring throughout the life of the asset. While the Bass Strait development has undoubtedly experienced its fair share of challenges over the life of the field, well integrity on all platforms continues to withstand the test of time.