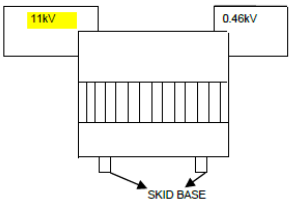
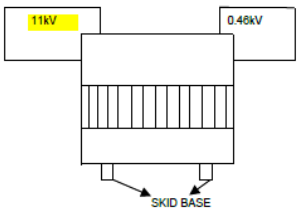
MODEC

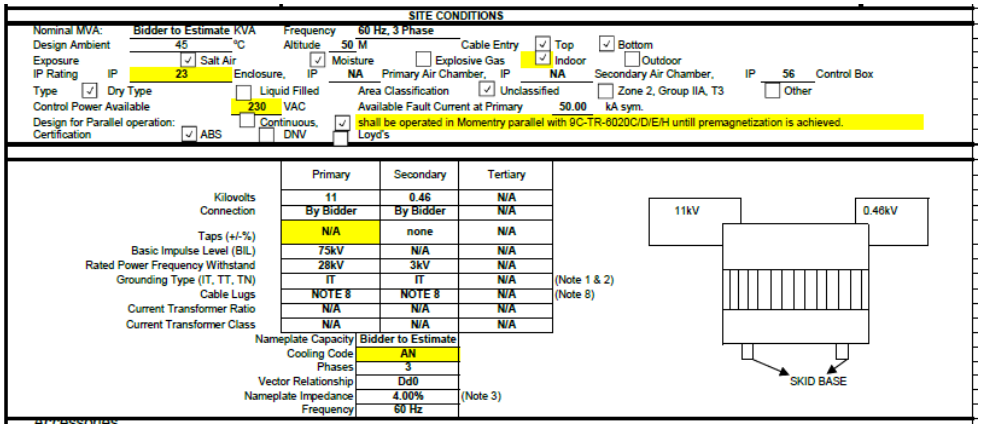
Barossa Offshore Project

ConocoPhillips

Package No:	0482-MI20-60PO-6050
Package Name:	**POWER TRANSFORMERS**
Scope of Work	The "Power Transformer Package" shall include oil type and dry-type transformers. The outdoor oil type transformers will be located in on the E-House roof top (safe area) of the FPSO and indoor dry type transformers shall be located in marine side TR room of the FPSO. The quantities of the transformers shall be as below; 1) 3.2MVA, 11/0.46kV, 3-Ph, 60Hz, IP56, Delta/Delta (Dd0), +/-5% Off Load Tap Changer (in steps of +/-2.5%), ONAN. Qty – 4Nos. Oil Type Transformers shall have accessories as per attached data sheet. Cables used for transformer shall be steel wire armoured. SITE CONDITIONS Nominal MVA: 3.2 MVA; Frequency 60 Hz, 3 Phase Design Ambient 45 °C; Altitude 50 M; Cable Entry Top ☑ Bottom ☐ Exposure ☑ Salt Air ☑ Moisture ☐ Explosive Gas; Indoor ☐ Outdoor ☑ IP Rating IP 56 Enclosure, IP 56 Primary Air Chamber, IP 56 Secondary Air Chamber, IP 56 Control Box/Transformer tank Type ☐ Dry Type ☑ Liquid Filled; Area Classification ☑ Unclassified ☐ Zone 2, Group IIA, T3 ☐ Other Control Power Available 230, 1 phase VAC; Available Fault Current at Primary 50 kA sym. Design for Parallel operation: ☐ Continuous, ☑ Momentary Certification ☑ ABS ☐ DNV ☐ Loyd's Primary / Secondary / Tertiary Kilovolts: 11 / 0.46 / N/A Connection: Delta / Delta / N/A Taps (+/-%): +/- 2.5 % in Steps of 1.25% / none / N/A Basic Impulse Level (BIL): 75kV / N/A / N/A Rated Power Frequency Withstand: 28kV / 3kV / N/A Grounding Type (IT, TT, TN): IT / IT / N/A (Note 2) Cable Lugs: NOTE 9 / NOTE 9 / N/A (Note 9) Current Transformer Ratio: N/A / N/A / N/A Current Transformer Class: N/A / N/A / N/A Nameplate Capacity: 3.2 MVA Cooling Code: ONAN Phases: 3 Vector Relationship: Dd0 Nameplate Impedance: 8.50% (Note 3) Frequency: 60 Hz  2) 3.5MVA, 11/0.46kV, 3-Ph, 60Hz, IP23, Delta/Delta (Dd0), +/-5% Off Load Tap Changer (in steps of +/-2.5%), AN. Qty – 2Nos. Cast Resin, dry type SITE CONDITIONS Nominal MVA: 3.5 MVA; Frequency 60 Hz, 3 Phase Design Ambient 45 °C; Altitude 50 M; Cable Entry Top ☑ Bottom ☐ Exposure ☑ Salt Air ☑ Moisture ☐ Explosive Gas; Indoor ☑ Outdoor ☐ IP Rating IP 23 TR Enclosure, IP NA Primary Air Chamber, IP NA Secondary Air Chamber, IP 56 Control / Marshalling Box Type ☑ Dry Type ☐ Liquid Filled; Area Classification ☑ Unclassified ☐ Zone 2, Group IIA, T3 ☐ Other Control Power Available 230, 1 phase VAC; Available Fault Current at Primary 50 kA sym. Design for Parallel operation: ☐ Continuous, ☑ Momentary Certification ☑ ABS ☐ DNV ☐ Loyd's Primary / Secondary / Tertiary Kilovolts: 11 / 0.46 / N/A Connection: Delta / Delta / N/A Taps (+/-%): +/- 2.5 % in Steps of 1.25% / none / N/A Basic Impulse Level (BIL): 75kV / N/A / N/A Rated Power Frequency Withstand: 28kV / 3kV / N/A Grounding Type (IT, TT, TN): IT / IT / N/A (Note 2) Cable Lugs: NOTE 9 / NOTE 9 / N/A (Note 9) Current Transformer Ratio: N/A / N/A / N/A Current Transformer Class: N/A / N/A / N/A Nameplate Capacity: 3.5 MVA Cooling Code: AN Phases: 3 Vector Relationship: Dd0 Nameplate Impedance: 9.50% (Note 3) Frequency: 60 Hz 

3) Pre-Magnetising Transformers : 11/0.46kV, 3-Ph, 60Hz, IP23, Delta/Delta (Dd0). Rating to be decided by supplier to suit magnetising requirements for above transformers

Qty – 6Nos. Cast Resin, dry type



SITE CONDITIONS

Nominal MVA: Bidder to Estimate KVA | Frequency 60 Hz, 3 Phase
Design Ambient 45 °C | Altitude 50 M | Cable Entry ☑ Top ☑ Bottom
Exposure ☑ Salt Air ☑ Moisture ☐ Explosive Gas ☑ Indoor ☐ Outdoor
IP Rating IP 23 Enclosure, IP NA Primary Air Chamber, IP NA Secondary Air Chamber, IP 56 Control Box
Type ☑ Dry Type ☐ Liquid Filled | Area Classification ☑ Unclassified ☐ Zone 2, Group IIA, T3 ☐ Other
Control Power Available 230 VAC | Available Fault Current at Primary 50.00 kA sym.
Design for Parallel operation: ☐ Continuous, ☑ shall be operated in Momentry parallel with 9C-TR-6020C/D/E/H untill premagnetization is achieved.
Certification ☑ ABS ☐ DNV ☐ Loyd's

	Primary	Secondary	Tertiary	
Kilovolts	11	0.46	N/A	
Connection	By Bidder	By Bidder	N/A	
Taps (+/-%)	N/A	none	N/A	
Basic Impulse Level (BIL)	75kV	N/A	N/A	
Rated Power Frequency Withstand	28kV	3kV	N/A	
Grounding Type (IT, TT, TN)	IT	IT	N/A	(Note 1 & 2)
Cable Lugs	NOTE 8	NOTE 8	N/A	(Note 8)
Current Transformer Ratio	N/A	N/A	N/A	
Current Transformer Class	N/A	N/A	N/A	

Nameplate Capacity	Bidder to Estimate	
Cooling Code	AN	
Phases	3	
Vector Relationship	Dd0	
Nameplate Impedance	4.00%	(Note 3)
Frequency	60 Hz	

Contract Award: Q2 2020; Delivery Q4 2020

Project Registration

ConocoPhillips is committed to ensuring Australian Industry full, fair and reasonable opportunity to participate in the Barossa Offshore Project. Expressions of Interest are invited from contractors and suppliers with the relevant capability and capacity to undertake the scope of work.

This is a request for specific expressions of interest. Contractors and suppliers will be considered for prequalification and tender if suitably qualified against this package.

Note that an important part of the project registration process is to register an Expression of Interest at the correct Scope level.

Scope level definition:

Full scope: Able to produce / supply the entire package.
Partial scope: Able to produce / supply one or more of the sub-packages.

All registrations are to be completed via ICN Gateway *BarossaOffshore.icn.org.au*. Please contact the ICNNT if registration assistance is required. Contact details: (08) 8922 9422 or *admin@icnnt.org.au*.

Project Website: ConocoPhillips Australia