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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. ANNEXURE-11 TO PY55294 LIST OF SPARES, TOOLS AND TACKLES FOR 33KV GAS INSULATED SWITCHGEAR PROJECT 75MW VISAKH REFINERY MODERNIZATION PROJECT (VRMP) CUSTOMER M/S HINDUSTAN PETROLEUM CORPORATION LIMITED,VIZAG,A.P CONSULTANT ENGINEERS INDIA LIMITED				

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. <u>NOTES</u> 1. This Document provides the list of Mandatory Spares, Commissioning Spares and Tools & Tackles to be supplied as part of the 33kV Gas Insulated Switchgear Package. 2. The Mandatory Spares are included as separate line items for Switchboard in Purchase Requisition Document. 3. The Commissioning Spares and Tools & Tackles are included in main item of 33kV GIS. 4. The quantities of the various Spare items indicated in these lists are specified as <i>Absolute quantity or Percentage or Set</i>. Besides, <i>certain criteria for calculating the spares</i> are also specified against some of the items in the lists. These criteria include 'each type', 'each rating', 'each type and rating', 'minimum quantity' etc. 5. Notes for filling the "Total" field: a. This field is <i>to be filled by the Vendor only after order placement</i>. b. The Total field shall be filled for each line item as per the details specified in the Quantity section. c. Wherever the criterion calls for calculation of spares by grouping them under different heads (like type, rating, colour etc.), the Vendor shall fill the Total field for each group. <i>It is mandatory for the Vendor to clearly delineate every group (as required by the criterion) and mention the spare quantities against each of them.</i> <i>Cumulative values will not be accepted by BHEL.</i> d. Wherever spare calculation results in a fractional value, the result shall be rounded to the closest integer value not less than 1. e. The BOM for calculation of Total quantity of spares shall be based on the Code-1 approved Switchboard drawings. f. In case, certain items are not applicable as per the Final BOM (referred in Cl. 5.e) "NA" shall be filled in the "Total" field against such items. 6. The Vendor shall submit this document after filling up all the applicable fields (as mentioned in above Notes) for BHEL's approval. 7. Any change (addition/deletion) for Spares shall be considered solely on the basis of change in BOM of the Feeders in Feeder List (Annexure-6 of PY55294) from the enquiry stage to the Code-1 approval. 8. The approved copy of this Document shall be used: a. During Inspection at Vendor's Works b. Verification of the Packing Lists before processing of payments. 9. The <i>Packing Lists</i> shall clearly mention the Material Code, Sl. Number, Description and Quantity of all items within each Transportation Case (i.e. Boxes, Cartons etc.). A copy of the Packing List shall be pasted on the Transportation Case and another copy shall be placed within the Case.				

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LIST OF MANDATORY SPARES
(Material Code: PY9755294139)

SL. NO.	ITEM	QUANTITY
A.	33kV GIS Switchgear	
1	Portable gas filling equipment/SF6 gas cart	1 Nos.
2	Handle for disconnector switch drive	4 Nos.
3	Handle for earthing switch drive.	4 Nos.
4	Pre selection key for three position switch.	1 Nos.
5	Power cable termination kit	2 Sets
6	Tripping coil (Per Switchgear)	1 Nos.
7	Closing coil (Per Switchgear)	1 Nos.
8	Capacitive type voltage detectors	1 Set
9	Control fuses/MCB	10 Nos. Each rating & type
10	Density monitoring device	2 No.s each type
11	Pressure Gauge	2 No.s each type
12	Indication lamp covers	5 No.s each colour
13	Indication lamps	20% or 3 nos. (min) whichever is more
14	Network switches	1 No. of each type
15	Protection Relays	1 No. of each type
16	Auxiliary Relays	1 No. of each type
B	Substation Automation System	
17	Ethernet switches	1 Nos. each type
18	All cards such as input & output cards, power supply cards, processor cards etc.	1 Nos. each type
19	Control fuses/ MCB	10 Nos. each rating and type

NOTES:
 1. The word 'TYPE' means the Make, Model no., Type, Range, Size/ Length, Rating, Material as applicable.
 2. Wherever % age is identified, Bidder shall supply next rounded figure.

SIGNATURE OF BIDDER

NAME

DESIGNATION

DATE

COMPANY SEAL

LIST OF COMMISSIONING SPARES AND TOOLS & TACKLES*(Shall be included part of main supply item)***COMMISSIONING SPARES**

Following are list of commissioning spare as bare minimum and same shall be made available during commissioning. Further, if any other spares are required during commissioning, same shall be made available by vendor without any commercial implications.

SL. NO.	ITEM	QUANTITY
1)	Closing Coil	2 Nos.
2)	Tripping Coil	2 Nos.
3)	Control MCBs	10 Nos. Each rating & type
4)	Control Fuses	10 Nos. Each rating & type
5)	Auxiliary Contactors	10 Nos. Each rating & type
6)	Control TBs	50 Nos.
7)	Shrouds	30 Nos.
8)	Gaskets	5 Mtrs
9)	Push Buttons	3 No.s
10)	Limit Position Switches	2 No.s
11)	L/R Switches	2 No.s
12)	Breaker Control Switches	2 No.s
13)	Indication lamp	30 No.s

TOOLS & TACKLES

The following are bare minimum requirement as specified, however, bidder shall offer any other special tools & tackles are required for O&M purpose as per OEM recommendation and same shall be supplied without commercial implication. List of tools and tackles required shall be indicated along with offer. In case no special tools are necessary for the offered equipment, vendor shall clarify the same.

SL. NO.	ITEM	QUANTITY
1	Spring charging handle	4

Vendor may suggest as per standard requirement if any tools & tackles required.

SIGNATURE OF BIDDER**NAME****DESIGNATION****DATE****COMPANY SEAL**