

S.NO	SCOPE OF WORK
1	Jobs shall be loaded on IBR-approved firms only.
2	BHEL will provide all raw material including tubes, machined sleeves/spacer tubes to fabricate the coil/Loose tubes. The vendor is responsible for collecting all materials from BHEL stores along with a group certificate signed by BHEL QC/Customer via MIV in a timely manner.
3	The welding shall be performed by IBR qualified welders using BHEL approved welding consumables.
4	The welding procedure specification (WPS) and Non-Destructive Testing(NDT) procedure shall be prepared and submitted to BHEL for approval.
5	The welding consumables shall be vendor's scope. The welding consumable shall be procured from BHEL approved PRESSURE PARTS welding consumables vendor per Annexure-E
6	The raw materials required for the WPS sample, bending First Off Trial (FOT) and First Off Inspection(FOI) shall be under the vendor's scope.
7	All fabrication, inspection, and testing shall adhere to relevant latest quality documents (CQP,SQP, SIP, QCP). Form 3B is under Vendor's scope.
8	All relevant documents (Drawings, GMS, and Quality documents) will be provided.
9	The cutting plans and joint location plans for both circuits shall be prepared by the vendor and submitted to OS for approval prior to the commencement of manufacturing. Get prior approval from Engg to put Butt joint in loose tube.
10	Ensure that raw material specifications match the GMS and drawing. If any mismatches are noticed in the raw materials, notify the same to QC and OS immediately for replacement by BHEL.
11	Proper colour coding and melt transfers must be ensured for traceability during and after fabrication.
12	Cut & edge prepare the tubes as per cutting, joint plan and drawing. Edge preparation of tube ends must be as per the drawing. (Refer to STD TP 062 05 99)
13	Sleeves must be inserted prior to tube butt welding and bending.
14	Build the circuits(Coils)/weld the inserts (loose tubes) using TIG/MIG/SMAW joints as per the approved WPS and drawing. Preheat must be followed as per WPS. welding must be done using TIG/MIG only.
15	Radiographic Testing (RT) shall be conducted on all tube butt joints (double-wall image – 100%) by the vendor using BHEL-approved sources. In case of rejection, vendor must repair and retest the joint.
16	Maintain records of all joints with unique identification numbers for traceability.
17	For bends, First-Off Trials (FOT) must be established for each outside diameter(OD), thickness, specification and bend radius. FOT reports are to be witnessed by QC/Customer as per SIPPP12.
18	Bend the tubes as per relevant circuit/part drawing.

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19	Mark the layout as per the drawing for loose tubes, and ensure that the bent loose tube is properly seated in the layout.
20	The following points must be taken care while fixing the tube butt joint in coils. a. A clear distance of 150mm is to be ensured from attachments. b. A clear distance of 300mm is to be ensured from bend curvature ends. c. A clear distance of 500mm is to be ensured between two butt joints and gang bend in case of gang bend panel. d. No joints are allowed between 90° bend straight portions (i.e. along the width of the coil). e. No joints are allowed between offset bends. f. Ensure minimum number of butt joint by utilizing available raw material.
21	Complete the fabrication of fixtures as per relevant assembly drawing. Fixtures shall be offered for inspection to BHEL QC/Customer.
22	Intermesh all circuits to form one layer of the coil.
23	Put the intermeshed coil in the fixture & fit, tack weld and full weld all the attachments as per relevant assembly drawing. Preheat must be followed as per WPS.
24	Perform PMI check for tubes, attachments and welds as per CQP/SQP.
25	Trim the excess length, perform edge preparation at the tube ends, and ensure the tube bore is maintained as per the drawing requirements.
26	Do heat treatment/Normalizing & Tempering wherever required as per SQP/CQP and WPS (N&T is applicable only for RS04). The vendor may obtain heat treatment co-operation from BHEL. Alternatively, an additional ₹9.40/kg for stress relieving and ₹27.67/kg for normalizing & Tempering will be payable if the vendor performs the heat treatment on his own or through any IRP & BHEL approved agency.
27	Heat treatment records and Charts shall be submitted to BHEL/Customer during final inspection.
28	Prepare dimensional and weld map reports for each coil. Dimensional reports are to be witnessed by BHEL QC/Customer as per CQP.
29	Perform Liquid Penetrant Inspection (LPI) as per CQP/SQP requirements and offer for BHEL QC/Customer. For Gr.91/Gr.92 materials, Liquid Penetrant Inspection must be performed after Stress Relieving (SR) only. Perform welding rework, if required.
30	Offer completed coils/Loose tubes for final inspection to BHEL QC/Customer along with the required documents: group certificate, RT report, FOT report, PMI report, LPI report, approved WPS, fixture clearance report, dimensional report, SR report, and weld map.
31	Perform air cleaning inside the tubes and conduct sponge test using the sponge sizes specified in SIPPP15. Sponge test must be witnessed by BHEL QC/Customer per CQP/SQP.
32	Provide identification markings on the coils as per the drawing/CQP/SQP (work order, DU, quantity, serial number, top/bottom identity, tube colour code(SIPPP2
33	Hydraulic test shall be carried out as per SIP: PP:04. In case any defects are observed during the test, carry out necessary repairs and re-test until the coil meets the acceptance criteria.

Section I D - 2026OSB013
Scope of Work (RS01 to RS04)

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34	Painting shall be under the vendor's scope.
35	Prepare a crate & stack the Coils in crate and handed over the coils to Neyveli site along with Form III B. Crate material shall be given by BHEL. Vendor has to collect the crate material from BHEL stores. Fabrication of crate and Shipping to site shall be vendor's scope.
36	Provide VCI pellets inside all tubes, plastic end caps to both ends of all the circuits.