PSGSG/ 2021-22/004	**Product Specifications For Enclosure for 33kV Isolator (for Bus Coupler)**	Drg. No.	
		Date	20.02.2022
		Product	**GVM36**

1.0 **Application**: The stainless steel Isolator Enclosure (Main and Reserve) is used for gas filled applications. The gas pressure in this metal enclosure is maintained at 0.1-0.4 MPa. The Isolator Enclosure shall meet following Specifications.

2.0 **Drawings**:

Main Assembly Drawing: 1. Enclosure Assembly 1U (Main)
2. Enclosure Assembly 1U (Reserve)

3.0 **Specifications:**

3.1 **Material:** Low Carbon Austenitic **stainless steel** confirming to AISI-304L.

3.2 Standard seamless or ERW (straight/ spiral) tubular sections shall be used for construction, here ever applicable in design. The pipe shall be pulled out using hydraulic or equivalent equipment as per desired sizes. Pull out shall be avoided on pipe welded joints.

3.3 Drawn profiles, to size, only shall be used for direct welding with the flanges (To be machined to the drawing only after welding). No smithy is allowed for formation/ matching of profiles in view of defect inception. Pipe and flanges shall be MIG/TIG welded with suitable SS electrode.

3.4 The welded sections shall be sized as per drawing and verified /tested using Dye Penetration (D.P.) technique at all stages of welding. Inside edges/weld shall be fused to obtain near smooth weld surface.

3.5 The flanges shall be manufactured to drawings after welding only. The flanges shall be machined as per instructions and maintaining parallelism of faces and Perpendicularity as prescribed. To ensure parallality, it is must to machine the components after welding all the sections as prescribed. The flange sealing surfaces shall be polished to RA 0.6 or better and the bolting holes shall be machined fine, using CNC milling, and shall have uniform chamfer. The tolerances, wherever not mentioned in the drawing, shall be within 0.10. Any sharp corners shall be removed as per the drawing. Wherever not specified in the drawing, a chamfer of 0.5x45° shall be provided at the sharp corners and edges.

3.6	All flanges of different dimensions shall be welded by maintaining parallallity as per limits of manufacturing drawing.
3.7	Weld splatter, if any, shall be removed by chipping or grinding on completion of the weld. Particular care should be taken to avoid any splatter on the inside of the chamber, at the joint or other locations.
3.8	Dye penetration report shall be generated and submitted to BHEL.
3.9	The tested assembly should be cleaned, degreased and prepared for pressure test. The assembly shall be tested at 8.5 bar pressure for 4 hours and pressure drop shall be recorded and communicated to BHEL. The leak shall be rectified and the test repeated to satisfaction. Components indicating drop in pressure during this test will not be accepted. The arrangement shall be kept at 15 bar for 15 minutes prior to this test to verify pressure withstanding capabilities specified in drawing.
3.10	The supplier shall stress relieve tested component to ensure zero post supply deformation.
3.11	Stress relieved component shall be electro-polished on the inside surface using moderate current densities.
3.12	The assemblies further shall be sandblasted on the outer surface and powder coated (> 50 Micron) as specified in drawing. During this operation all flanges shall be masked at the sealing surfaces and at the rim.
3.13	The dimensional checks and the leak test shall be carried out in person/virtually through video conferencing in presence of BHEL personnel. It is preferable to have first stage inspection after manufacturing of components (Before full welding).

3.14 Customer to give Minimum 7 days intimation for PDI at two stages:
1)Before full welding 2) After complete manufacturing
PDI shall be carried out person/virtually through video conferencing in presence of BHEL personnel.

3.15 The accepted component shall be packed in wooden boxes with suitable PVC covers on the flanges to prevent transit damages. A thick polyethylene cover shall be used to seal to component from ingress of moisture and water. For transit time higher than 2-weeks, adequate quantity of moisture absorbent shall also be placed with the component.

3.16 Following certificates shall be furnished for acceptance of the component:
3.16.1 Material source certificate,
3.16.2 Material test certificate ,
3.16.3 Stage wise DP tests,
3.16.4 Pressure drop test and pressure withstand test report,
3.16.5 Electro-polishing schedule.
3.16.6 Powder coating schedule
A certified copy of above documents shall be sent along with the delivery note..

4.0 The components shall be **guaranteed** against all manufacturing defects.