



GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

**SPECIAL COMMERCIAL CONDITIONS
FOR
DESIGN AND DEVELOPMENT OF HIGH EFFECTIVENESS LARGE AFTER
COOLER FOR DLW BUILT 16 CYLINDER 3100/3300/3600 HP ALCo DLW ENGINES
OF
INDIAN RAILWAYS**

Specification No. TS/ED/ 2012/68

**Engine Development Directorate
Research Designs and Standards Organisation
Manak Nagar, Lucknow- 226011**

1. TRAINING AND INSPECTION

- i The bidder shall be willing to train at least five IR personnel for two weeks in the new technology at the time of prove-out on engine test bed.
- ii. The following performance tests have to be passed by the offered product during post manufacturing inspection by RDSO authorised representatives at manufacturer's premises:
 - a) Core Leakage test- The manufacturer shall have in-house facility for this test. The after cooler shall be tested with air pressure of 7.2 bar applied for at least 30 minutes and there shall be no leakage of air during static testing.
 - b) Vibration-The firm shall have facility of rig for vibration testing of the after cooler assembly. The prototype after cooler shall be subjected to vibration test as stipulated in the IEC 61373 category 1 Class A Body mounted. The after cooler should not fail during the testing.

It may be noted that in the locomotive bears 3g longitudinal, 1.5 g laterals and 2g vertical acceleration shocks encountering during the operation.
 - c) Erosion test- This test for prototype shall be carried to establish that the after cooler must not fail by erosion at water velocity less than 2.14 meter per second.
- iii Inspection of the defined scope supply shall be carried out by the authorised representatives of Engine Development Directorate at OEM's manufacturing facility without any additional cost before dispatch of material. The test programme shall be drawn up by the firm in consultation with RDSO. Type tests of all equipment shall be carried out by the manufacturer at his own responsibility and cost in the presence of the representative of IR.

2. WARRANTY

The supplier shall provide a warranty for the satisfactory performance for a period of 24 months for all the components of the High Effectiveness Large After Cooler from the date of commissioning on locomotive. Any damage or unsatisfactory performance due to design or manufacturing inadequacies noticed during the above period shall be rectified or component/equipment replaced by the supplier free of cost. The replaced component/equipment shall also be covered under warranty for the balance period of warranty of the original after cooler.

3. PAYMENT TERMS

The schedule of payment shall be as under for various phases: -

S.No.	Activity	Payment in % of accepted Tender Cost	Expected completion time
1	PHASE I After design Development & dispatch of material to EDD/ RDSO after pre-dispatch inspection.	80% of the total cost	6 Months
2	PHASE II (i) Proving out of After cooler on locomotive after reliability verification testing.	20% of the total cost	One year
3	PHASE III After completion of Warranty. Warranty as per IRS conditions of contract for a period of 24 months.	Release of 10 % bank guarantee of the total cost of the project	

4. CONFIDENTIALITY OF DEVELOPMENT AND INTELLECTUAL PROPERTY RIGHTS

All data that is generated as a result of design, development and testing of High Effectiveness Large After Cooler systems, sub-systems and components shall become the sole property of Indian Railways. The information pertaining to High Effectiveness Large After Cooler supplied by the successful tenderer shall not be disclosed by IR without prior approval of the tenderer. Information pertaining to components supplied by IR shall not be disclosed to the Third Parties by the successful tenderer without preliminary authorization in a written permission of the Railway Board, Ministry of Railways, Government of India.

5. INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS (IPR)

- i.** Successful tenderer shall give an undertaking for non-infringement of intellectual property rights for all specification, drawings issued by RDSO.
- ii.** Indian Railways shall not be responsible for any infringement of patent rights arising due to similarity in design, manufacturing process, use of similar components in design & development and any other factor not mentioned herewith. In case of disputes on account of infringement of patent rights, entire responsibility and liability to settle any such dispute/ matters shall lie with the successful tenderer.

6. INFORMATION NEEDED FROM INDIAN RAILWAYS

RDSO shall share necessary documents and drawings with the successful tenderer after signing of the non-disclosure agreement (NDA).