

Reasoned document for STR SIQ 0420 ver 1.0 for Relays

Existing	Firm's Comments	Modified	RDSO's View
Existing	Firm's Comments	To be Modified	RDSO's View
ESSENTIAL PLANT & MACHINERY REQUIRED FOR PRODUCTION	Firm's Comments		
1. Universal lathe machine Computer Numerical Control(CNC) Machine and Other equipments of machine shop (In house/Outsourced)	M/s Integra : Outsourced M/s DCC : Outsourced M/s Eldyne : Outsourced M/s CGL: Noted Machining job work outsourced to skilled vendors having machine shop along with CNC machine with valid ISO certification. M/s Siemens : Available at vendor QA/S&T/RDSO/LKO: Other equipment may be elaborated.	Computer Numerical Control(CNC) Machine and Other equipments of machine shop (In house/Outsourced)	Agreed
2. Drilling machine —Electrically Operated Bench Drilling machine	M/s Integra :Available M/s DCC :Available M/s Eldyne :Available M/s CGL: Noted M/s Siemens : Available	Electrically Operated Bench Drilling machine	Agreed
3. Distilled water plant Three stage Distilled water plant with minimum 1 litre/hr capacity	M/s Integra: Not required for metal to metal Relay As distilled water is used to clean SIG Contacts of Metal to Carbon relays so this item is not required for metal to metal relays. M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted M/s Siemens: Not required for metal to metal Relay	Three stage Distilled water plant with minimum 1 litre/hr capacity for M to C relay	Agreed

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<p>4. PLC Based Injection moulding machine (Medium duty-hydraulic)</p>	<p>M/s AEW : Allow the relay manufacturer to procure the said furnished material(contact block and relay covers) from a RDSO approved manufacturer of plastic components like ARA terminal Block, fuse block, lamp Holder etc which is covered under IRS:S75/2006</p> <p>M/s Integra : Outsourced we have outsourced plastic moulding or item like plug board, Socket etc to our supplier/s shaily and M/s Hifa are ISO 9001 certified and having PLC controlled hydrolic injection moulding machine</p> <p>M/s DCC : This process is not allowed in metropolitan area like Kolkata due to pollution. This also requires a huge installation process with big and costly machineries. This setup also facilitates variety of similar moulded item used in Non Railway along with moulded component. Thus outsourced.</p> <p>M/s Eldyne : Since this setup involve huge cost requires large space for installation within the existing factory setup, it is not cost effective for the company like us whose production is in a low web. Further the production rate of injection moulding machine is so high that it can cater the need of a relay unit whine very short span and for the remaining time it would be idle.</p> <p>M/s Orient : Pollution control board has reservation in installation of injection Moulding Machine within City area. Our workshop is within city. PLC based injection moulding Machine is sophisticated machine</p>	<p>PLC Based Injection moulding machine (Medium duty-hydraulic)</p>	<p>Not Agreed. PLC Based Injection moulding machine (Medium duty-hydraulic) should be in-house because plug board, contact block and relay cover etc. are vital component of Relay</p>

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	<p>to cater large production. Our input to output ratio to feed the machine regularly will be very small. The installation of this machine will therefore not be very cost effective in our case. Besides injection Moulding is a different kind of industry which require special skilled engineer and operator</p> <p>M/s CGL: Injection Moulding process requires specialised machinery and special skill to operate and maintain. For us as a relay manufacturer, it may not be phesible /viable to create all facility in house, hence request to allow for outsourced to specialist in moulding process having valid ISO certification.</p> <p>M/s Siemens : Available</p>		
<p>5. Temperature controlled oven Chamber</p>	<p>M/s Integra : Available M/s DCC :Available M/s Eldyne : Available M/s CGL: Noted M/s Siemens : Available at vendor</p> <p>QA/S&T/RDSO/LKO: Minimum Applicable volume/Capacity and temperature range of oven may be given as Temperature range of oven may be specified i.e 180 Liters,-40 to 150°C</p>	<p>Temperature controlled Chamber(180 liters, -40°C to 150°C</p>	<p>Agreed Relays are tested at -10°C and + 70° C also capacity of Temperature Controlled chamber is specified.</p>
<p>6. Electroplating plant (In house/Outsourced)</p>	<p>M/s Integra : Outsourced M/s DCC : Outsourced M/s Eldyne : Outsourced M/s CGL: Noted being outsourced to vendor M/s Siemens : Available at vendor</p>	<p>Electroplating plant (In house/Outsourced)</p>	<p>Agreed</p>

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	having valid ISO certificate.		
a) Magnetic separator			
b) Passive plant			
c) Bright dipping plant			
d) Lacquering plant			
e) Pickling & degreasing plant			
f) Polishing/Buffering machine			
7. Soldering machine with timer	<p>M/s Integra : Firm have Temperature control soldering Iron. None of our relays are using PCB in it and construction of our relay is such that soldering can be done by soldering iron only. Soldering machine with timer is basically wave soldering machine required for soldering of different components on PCB.</p> <p>M/s DCC: Temperature Controlled soldering Station available.</p> <p>M/s Eldyne : Available</p> <p>M/s CGL: Noted</p> <p>M/s Siemens : Available</p> <p>QA/S&T/RDSO/LKO: Item Name maybe given as Temperature Controlled Soldering/De-soldering Iron</p>	<p>Temperature controlled Soldering/De-soldering Station machine with timer</p>	<p>Agreed</p>
8. Coil Winding Machine	<p>M/s Integra :Available</p> <p>M/s DCC: Available</p> <p>M/s Eldyne :Available</p> <p>M/s CGL: Noted</p> <p>M/s Siemens : Available</p>	<p>Coil Winding Machine</p>	<p>Agreed</p>
9. Ultrasonic vacuum degreasing/cleaning plant	<p>M/s Integra :Not required for metal to metal Relay</p> <p>M/s DCC: Available</p> <p>M/s Eldyne :Available</p>	<p>Ultrasonic vacuum degreasing/cleaning plant for M to C Relay</p>	<p>Agreed. Ultrasonic vacuum degreasing/cleaning plant</p>

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	M/s CGL: Noted M/s Siemens : Available in house at vendor		is used for Metal to Carbon relay only
10. Jigs & fixtures	M/s Integra :Available M/s DCC: Available M/s Eldyne :Available M/s CGL: Noted M/s Siemens : Available	Jigs & fixtures	Agreed
11. Special tools, torque, wrench, torque drivers etc.	M/s Integra :Available M/s DCC: Available M/s Eldyne :Available M/s CGL: Noted M/s Siemens : Available	Special tools, torque, wrench, torque drivers etc.	Agreed
12. Air-conditioned space for final assembly & testing of relays. Remaining working space including store shall be dust free.	M/s Integra :Available M/s DCC: Available M/s Eldyne :Available M/s CGL: Noted M/s Siemens : Available	Air-conditioned space for final assembly & testing of relays. Remaining working space including store shall be dust free.	Agreed
II. ESSENTIAL TESTING EQUIPMENTS REQUIRED FOR QUALITY ASSURANCE			Agreed
1. Voltmeter of accuracy class 0.5 of IS 1248	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Digital Voltmeter min 4 ^½ Digit	Agreed
2. Insulation tester, 500V DC	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Digital Insulation tester, 500V DC	Agreed
3. Ammeter of accuracy class 0.5 of IS 1248	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Digital Ammeter min 4 ^½ Digit	Agreed
4. Digital bounce/time interval meter	M/s DCC: Available M/s Eldyne: Available	Digital bounce/time interval meter	Agreed
5. High voltage break down tester, upto 5KV AC	M/s DCC: Available M/s Eldyne: Available	Digital High voltage break down tester, upto 5KV AC	Agreed

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Existing	Firm's Comments	Modified	RDSO's View
	M/s CGL: Noted		
6. DC regulated power supplies	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Digital DC regulated power supplies	Agreed
7. Registration and code checking jig	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Registration and code checking jig	Agreed
8. Digital multimeter, Min. 4 ½ digit	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Digital multimeter, Min. 4 ½ digit	Agreed
9. Digital micro ohm meter	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Digital micro ohm meter	Agreed
10. Contact resistance measurement set up	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Digital Contact resistance measurement set up	Agreed
11. Test panel for AC immunity test	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Test panel for AC immunity test	Agreed
12. Test panel for non-overlapping bridging test	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Test panel for non-overlapping bridging test	Agreed
13. Non-weld ability test set up (Not applicable for M to C relay)	M/s DCC: NA M/s Eldyne: NA M/s CGL: Noted	Non-weld ability test set up (Not applicable for M to C relay)	Agreed. Weld ability not possible in metal to Carbon relay
14. Thickness tester to check the thickness of Electro plating & surface coating	M/s DCC: Available M/s Eldyne: Available M/s CGL: Noted	Thickness tester to check the thickness of Electro plating & surface coating	Agreed
15. Variable voltage Auto-transformer (VARIAC)	M/s DCC: Available M/s Eldyne: Available	Variable voltage Auto-transformer (VARIAC)	Agreed
16. GO & NOGO gauges	M/s DCC: Available M/s Eldyne: Available	GO & NOGO gauges	Agreed

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17. Tension Gauges	M/s DCC: Available M/s Eldyne: Available	Tension Gauges	Agreed
18. Feeler Gauge	M/s DCC: Available M/s Eldyne: Available	Feeler Gauge	Agreed
19. Pressure Gauge	M/s DCC: Available M/s Eldyne: Available	Pressure Gauge	Agreed
20 Digital micrometer	M/s DCC: Available M/s Eldyne: Available	Digital micrometer	Agreed
21. Digital vernier callipers	M/s DCC: Available M/s Eldyne: Available	Digital vernier callipers	Agreed
22. Suitable high efficiency LED indication panel for all configuration	M/s DCC: Available M/s Eldyne: Available	Suitable high efficiency LED indication panel for all configuration	Agreed
23. Endurance Test facility in a separate room	M/s DCC: Available M/s Eldyne: Available	Endurance Test facility in a separate room	Agreed
24. Automatic test set up with auto record/print facility for measurement of important electrical parameters.	M/s DCC: Action is being taken to comply with this clause in consultation with RDSO/KOI M/s Eldyne: Available	Automatic test set up with auto record/print facility for measurement of important electrical parameters	Agreed
25. AH measuring equipment shall be compatible to work with PC/Micro-processor based test set ups.	M/s DCC: Action is being taken to comply with this clause in consultation with RDSO/KOI M/s Eldyne : So far not required as discussed in the meeting held in RDSO, Lucknow M/s Orient: We have arrangement of computerised relay testing facilities for measurement of important electrical parameter as stated against point no 24 . Point No 25 is a repetition of the requirement .this may please be eliminated	DELETED	Agreed As it is just repetition of item no.24 above in which all facilities are there to measure all parameters with recording and printing.

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<p>1. Plant, machinery and testing equipments given above are only indicative. All necessary plant and machinery of adequate capacity and testing equipments as necessary to manufacture the product as per RDSO specification and drawings and to ensure quality shall be provided.</p>		<p>1.Plant, machinery and testing equipments given above are only indicative. All necessary plant and machinery of adequate capacity and testing equipments as necessary to manufacture the product as per RDSO specification and drawings and to ensure quality shall be provided.</p>	<p>Agreed</p>

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<p>2.Outsourcing, if any, of any component/ sub assembly shall be indicated in the 'Quality Assurance Plan' and approval of RDSO, Lucknow shall be obtained. Outsourcing of a vital component/ sub assembly shall be from ISO-9000 certified manufacturer. In case of outsourcing, the ultimate responsibility to ensure quality, reliability and compliance of RDSO specification & drawings for the outsourced component/ sub assembly shall be of the vendor of the Relay and all necessary tests and checks shall be done by him to ensure the same. Sampling plan and details of tests and checks proposed to be conducted by him on outsourced components/sub-assembly shall be indicated in the QAP. Proper test record with traceability to the final product shall be maintained. ISO certificate of outsourced firm should be included in QAP In case manufacturing of some component/ sub assembly is</p>	<p>QA/S&T/RDSO/LKO:- ISO certificate of outsourced firm should be included in QAP may be amended by "The Outsourced firm should have valid ISO certificate." Following May be deleted In case manufacturing of some component/ sub assembly is outsourced, plant & machinery as required for manufacturing of that component/ sub assembly may be considered optional for the vendor applying for registration/ approved by RDSO.</p> <p>M/s Histrionics/Hyderabad: Verbatim reproduced the word sub assembly. The word sub assembly should be deleted. All activities pertaining to sub assembly and assembly of relay has to be the responsibility of relay manufacturer and this activity shall be carried out in house and shall not be outsourced to sub contactor. If this facility or feature is allowed, then a relay manufacturer can outsource complete assembly and testing claiming it as an "sub assembly activity" and carry out only RDSO inspection related activities, which defeats the very purpose of manufacturing activity. We</p>	<p>2. Outsourcing, if any item related to 1&6 of Machinery and Plants, of any component shall be indicated in the 'Quality Assurance Plan' and approval of RDSO, Lucknow shall be obtained. Outsourcing of a vital component shall be from ISO-9000 certified manufacturer. In case of outsourcing, the ultimate responsibility to ensure quality, reliability and compliance of RDSO specification & drawings for the outsourced component shall be of the vendor of the relay and all necessary tests and checks shall be done by him to ensure the same. Sampling plan and details of tests and checks proposed to be conducted by him on outsourced components shall be indicated in the QAP. Proper test record with traceability to the final product shall be maintained. ISO certificate of outsourced firm should be included in QAP The Outsourced firm should have valid ISO certificate.</p>	<p>Agreed</p>

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<p>outsourced, plant & machinery as required for manufacturing of that component/ sub assembly may be considered optional for the vendor applying for registration/ approved by RDSO.</p>	<p>request that STR limit only certain limited number of components to be out sourced, instead of the current proposal which allows components to be outsource without any limit. STR can specify only 25% of total components can be outsourced ,not 100%</p> <p>In case manufacturing of some component/ sub assembly is outsourced, plant & machinery as required for manufacturing of that component/ sub assembly may be considered optional for the vendor applying for registration/ approved by RDSO.</p>		
<p>3. Audit of the manufacturing process of outsourced component/ sub assembly in the manufacturing premises shall be carried out by the vendor of the Relay at least once a year and report submitted to Director/QA/RDSO. Duly qualified persons having knowledge of the outsourced manufacturing process shall be deputed for audit. Proper audit record shall be maintained</p>	<p>RDSO/QA/S&T:-Proper audit record shall be maintained by the firm</p>	<p>3.Audit of the manufacturing process of outsourced component in the manufacturing premises shall be carried out by the vendor of the relays at least once a year and report submitted to Director/QA/RDSO. Duly qualified persons having knowledge of the outsourced manufacturing process shall be deputed for audit. Proper audit record shall be maintained by the firm. Audit of the manufacturing process of outsourced component in the manufacturing premises shall also be carried out by the RDSO if desire.</p>	<p>Agreed</p>

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<p>4. Checks and tests shown in the Quality Assurance Flow Charts are only indicative. All necessary checks and tests as necessary to ensure quality shall be carried out at every stage of manufacturing and proper record of all checks and tests shall be maintained.</p>		<p>4. Checks and tests shown in the Quality Assurance Flow Charts are only indicative. All necessary checks and tests as necessary to ensure quality shall be carried out at every stage of manufacturing and proper record of all checks and tests shall be maintained. Outsourced process should be clearly marked in the process flow chart in QAP</p>	<p>Agreed</p>
<p>5. This STR shall be applicable to all new vendors applying for registration.</p>		<p>5. This STR shall be applicable to all new vendors applying for registration.</p>	<p>Agreed</p>
<p>6. All existing approved vendors shall be advised for implementation of new STR. A reasonable period for compliance shall be six months from date of issue of STR.</p>		<p>6. All existing approved vendors shall be advised for implementation of new STR. A reasonable period for compliance shall be six months from date of issue of STR.</p>	<p>Agreed</p>

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<p>7. Except item no.1 and 6 of plant and machinery all other items are mandatory to be in house.</p>		<p>7.Except item no.1 and 6 of plant and machinery all other items are mandatory to be in house</p>	<p>Agreed</p>

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