

Reasoned document for STR/SIQ/422 ver 1.0 Fail Safe Electronic time delay device/Fail Safe electronic Flasher device

Existing	Firm's comments	Modified	RDSO View'
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I. ESSENTIAL PLANT & MACHINERY REQUIRED FOR PRODUCTION	Firm's Comments	I. ESSENTIAL PLANT & MACHINERY REQUIRED FOR PRODUCTION	RDSO View's
1. <b>Electrically Operated Bench</b> Drilling machine	M/s DCC : Available M/s Epsilon: Flasher: Required M/s Epsilon: FST : Required	<b>Electrically Operated Bench</b> Drilling machine	Agreed Only word "Electrically Operated Bench" is added.
2. <b>PLC Based</b> Injection moulding machine (In-house/outsourced)	M/s DCC : Outsourced  M/s Epsilon: Flasher: Not Required all moulded part outsourced  M/s Epsilon: FST Not Required all moulded part outsourced	<b>PLC Based</b> Injection moulding machine (Medium duty hydraulic) (In-house/outsourced)	Agreed  As the PLC based injection moulding is a complete set up involving huge cost requiring a huge space. This also requires a huge installation process with big and costly machineries. The set up can only be utilized for a very short span and remain idle for major time
3. <b>Electroplating</b> ( In house/outsourced)	M/s DCC: Outsourced	<b>Electroplating</b> ( In house/outsourced)	Agreed, with vendor comments for outsourcing of the item due to the following reason:-
a) Passive plant	M/s Epsilon :Flasher: Not Required M/s Epsilon: FST: Not Required Epsilon M/s DCC: Outsourced	a) Passive plant	As decided in minutes of meeting dated 16.10.2017, that due to Pollution effect state authorities banned this items Hence it may be allowed to be outsourced.
b) Bright dipping plant	M/s Epsilon :Flasher: Not Required M/s Epsilon :FST: Not Required M/s DCC: Outsourced	b) Bright dipping plant	

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c) Lacquering plant	M/s Epsilon :Flasher: Required M/s Epsilon :FST: Required M/s DCC: Outsourced	c)Lacquering plant	
d) Polishing/Buffering machine	M/s Epsilon :Flasher: Required M/s Epsilon :FST: Not Required M/s DCC: Outsourced	d)Polishing/Buffering machine	
4. Temperature controlled soldering machine	Anu Vidyut: Soldering machine may be replaced as soldering station because the word machine is misleading create confusion M/s DCC: Available M/s Epsilon: Flasher: Required M/s Epsilon: FST: Required	Temperature controlled soldering and <del>De-soldering station</del> Machine	Agreed. As the firm has described that the word Machine is misleading create confusion. De-soldering station also mentioned needed for de-soldering of electronic components.
5. Test jigs & fixtures	M/s DCC: Available M/s Epsilon: Flasher: Required M/s Epsilon FST: Required	Test jigs & fixtures	No change with respect to existing STR
6. Hot & cold climate chambers for temperature cycling	M/s DCC: Available Epsilon Flasher: Required Epsilon FST: Required	Hot & cold climate chambers for temperature cycling	No change with respect to existing STR
<del>7. Burn in chamber</del>	Epsilon Flasher: Required Epsilon FST: Required M/s Annu Vidyut, stated that Burn in chamber may be replaced by Hot & cold climate chamber.	<del>Burn in chamber</del>	Not Agreed with Epsilon & Agreed with Annu Vidyut This is redundant item as Burn in test can be done in Hot chamber of Item No 6. Thus this item has no relevance. Hence this can be deleted.

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<p>8. ROM Programmer &amp; UV Eraser (programmer &amp; eraser as required for embedded software)</p>	<p>M/s Anu Vidyut: ROM Programmer &amp; UV Eraser may be replaced as ROM programmer only because UV Eraser is inbuilt in ROM programmer and no need to write it separately.                      M/s DCC: Available                      M/s Epsilon: Flasher:-No vendor uses ROM Type Programmer. All uses micro controller                      M/s Epsilon: FST- No vendor uses ROM Type Programmer. All uses micro controller</p>	<p>ROM Programmer &amp; UV Eraser (programmer &amp; eraser as required for embedded software)</p>	<p>No change with respect to existing STR.</p>
<p>9. Flow solder line</p>	<p>M/s DCC: Flow solder line i.e Wave solder is a bulk soldering process used in PCB. It is used for large scale electronic application. Temperature Controlled Soldering station( Sn 4) is used.                      M/s Epsilon: Flasher: Outsourced                      M/s Epsilon: Flasher: Outsourced                      M/s Urban Tekno : Flow solder line may be consisting 'automatic dip soldering machine'. The quality of the soldering is maintained as per the requirements since the recommended procedures are followed with proper materials,                      M/s Anu Vidyut : Flow solder line/dip soldering machine                      b) Component forming machine                      c) PCB populating machine/PCB Populating Jigs</p>	<p>Flow solder line/Dip Soldering Machine</p>	<p>Dip Soldering Machine may be permitted in line with STR of power supply equipment.</p> <p>Not agreed With M/s DCC &amp; M/s Epsilon as Quality of Soldering with Soldering Station is inferior than wave soldering/ Dip Soldering.</p> <p>Agreed with M/s Urban &amp; M/s AnuVidyut as for low volume production Dip Soldering may be considered. The same is in line with STR of Power Supply Equipments.</p>

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	<p>This machine are part of PCB population process, which is a single process often outsourced to single sub vendor.</p>		
<p>10. Component forming machine</p>	<p>M/s DCC: Component forming Tool is available.                      M/s Epsilon: Flasher: Outsourced                      M/s Epsilon: Flasher: Outsourced                      M/s Anu Vidyut : Component forming machine                      This machine are part of PCB population process, which is a single process often outsourced to single sub vendor.</p>	<p>Component forming machine</p>	<p>No change with respect to existing STR</p>
<p>11. PCB populating machine</p>	<p>M/s Urban Tekno: Manual insertion of the components may be accepted. This is in view of the volume of the products the automatic insertion machine is not at all feasible                      M/s DCC:PCB populating Jig Available                      M/s Epsilon: Flasher: Outsourced                      M/s Epsilon: Flasher: Outsourced                      M/s Anu Vidyut:- PCB populating machine/PCB Populating Jigs.                      This machine are part of PCB population process, which is a single process often outsourced to single sub vendor.</p>	<p>PCB populating machine/PCB Populating Jig</p>	<p>Agreed with firms comment for option of PCB populating jig in view of the low volume of the product .</p>

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12. Air-conditioned space for final assembly & testing of device. Remaining working space including store shall be dust free.	M/s DCC: Available M/s Epsilon: Flasher:- Assembly and testing are done in the production hall of the company and stores shall be dust free. Programming is done in air condition room M/s Epsilon: FST:-Assembly and testing are done in the production hall of the company and stores shall be dust free. Programming is done in air condition room	12.Air-conditioned space for final assembly & testing of device. Remaining working space including store shall be dust free.	No change with respect to existing STR
II. ESSENTIAL TESTING EQUIPMENTS REQUIRED FOR QUALITY ASSURANCE		ESSENTIAL TESTING EQUIPMENTS REQUIRED FOR QUALITY ASSURANCE	
1. Insulation tester, 500V DC	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	1. <b>Digital</b> Insulation tester, 500V DC	Digital Word has been added as it is more accurate & user friendly
2. Digital time interval meter	M/s DCC: Available M/s Epsilon: Flasher: Not Required M/s Epsilon: FST: Required	2. Digital time interval meter	No change with respect to existing STR
3. High voltage break down tester, up to 5KV AC	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	3. <b>Digital</b> High voltage break down tester, up to 5KV AC	Digital Word has been added as it is more accurate & user friendly
4. DC regulated power supplies	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	4. <b>Digital</b> DC regulated power supplies	Digital Word has been added as it is more accurate & user friendly
5. Registration and code checking jig	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	5.Registration and code checking jig	No change with respect to existing STR
6. Variable voltage Auto-	M/s DCC: Available	6. <del>Variable voltage Auto-</del>	Agreed, There is no need of variable

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transformer (0 to 260V)	M/s Epsilon: Flasher:-There is no need of variable voltage Auto Transformer M/s Epsilon: FST:-There is no need of variable voltage auto Transformer	<del>transformer (0 to 260V)</del>	voltage Auto Transformer as there is no test indicated in specification using this equipment.
7. Digital micrometer	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	7.Digital micrometer	No change with respect to existing STR
8. Digital vernier calipers	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	8.Digital vernier calipers	No change with respect to existing STR
9. Endurance Test facility in a separate room	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	9.Endurance Test facility in a separate room	No change with respect to existing STR
10. Storage dual beam oscilloscope/Digital storage Oscilloscope	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Not Required	10. <del>Storage dual beam Oscilloscope</del> /Digital storage Oscilloscope with automatic measurement of flash rate and Duty cycle and PC interface.	Digital storage Oscilloscope with automatic measurement of flash rate and Duty cycle and PC interface may be added in lieu of item no.16
11. Digital multimeters – 4 ½ digits or better.	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	11.Digital multimeters – 4 ½ digits or better.	No change with respect to existing STR
12. Test stations for testing electronic sub-assemblies/PCBs.	M/s DCC: Available M/s Epsilon: Flasher :- Required M/s Epsilon: FST : - Required	12.Test stations for testing electronic sub-assemblies/PCBs.	No change with respect to existing STR
13. Frequency counter	M/s DCC: Available M/s Epsilon: Flasher :- Not Required M/s Epsilon: FST : - Not Required	14. Digital Frequency counter	Digital Word has been added as it is more accurate & user friendly
14. Digital IC tester.	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	14. Digital IC tester.	No change with respect to existing STR
15. Digital LCRQ meter.	M/s DCC: Available M/s Epsilon: Flasher :-Required M/s Epsilon: FST : -Required	15.Digital LCRQ meter.	No change with respect to existing STR

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<p><del>16. Automatic test set up with auto record/print facility for measurement of important electrical parameters.</del></p>	<p>M/s Epsilon: flasher:-Digital storage Oscilloscope is used for Flasher unit.</p> <p>M/s Epsilon: FST:-Test jig is used for FST</p>	<p><del>16. Automatic test set up with auto record/print facility for measurement of important electrical parameters.</del></p>	<p>1. Automatic test set up with auto print/record facility for measurement of important electrical parameter is required for QN1,QNA1 and QSPA1 relay only.</p> <p>2. No quality improvement is added by this equipment</p> <p>3. Digital Storage Oscilloscope with PC interface can be used for this purpose</p>
<p><del>17. All measuring equipment shall be compatible to work with PC/Micro-processor based test set ups.</del></p>	<p>M/s Epsilon: flasher:-Quantum of order does not justify the automatic test jig</p> <p>M/s Epsilon: FST:-Quantum of order does not justify the automatic test jig</p>	<p><del>17. All measuring equipment shall be compatible to work with PC/Micro-processor based test set ups.</del></p>	<p>Not required, as mentioned above in item no 16</p>

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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>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>No Change</p>
<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 &amp; drawings for the outsourced component/ sub assembly shall be of the vendor of the Fail Safe Electronic Time Delay</p>	<p>QA/S&amp;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 &amp; 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>Outsourcing, if any <b>item related to 2 &amp; 3 of Essential Plants and machinery shall be indicated</b> in the 'Quality Assurance Plan' and approval of RDSO, Lucknow shall be obtained. Outsourcing of items related to 2&amp;3 of Essential Plants and Machinery as mentioned above shall be from valid ISO certified sources. In case of outsourcing, the ultimate responsibility to ensure quality, reliability and compliance of RDSO specification &amp; drawings for the outsourced components shall be of the vendor of the Fail Safe Electronic Time Delay device/Fail Safe Electronic Flasher device and all necessary tests and checks shall be done by him to ensure the same. Sampling plan and details of tests and</p>	<p>Agreed with QA/S&amp;T/LKO instead of including QAP of Outsourced firm, it may be kept separately as it has validity.</p>



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<p>device/Fail Safe Electronic Flasher device 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</p> <p>In case manufacturing of some component/ sub assembly is outsourced, plant &amp; 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>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.</p>	
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<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 Fail Safe Electronic Time Delay</p>	<p>RDSO/QA/S&amp;T:-Proper audit record shall be maintained by the firm</p>	<p>Audit of the manufacturing process of outsourced component/ sub assembly in the manufacturing premises shall be carried out by the vendor of the Fail Safe Electronic Time Delay</p>	<p>Agreed with QA/S&amp;T/Lko Proper audit records of out sourced firm need to be maintained.</p>
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<p>device/Fail Safe Electronic Flasher device atleast 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>device/Fail Safe Electronic Flasher device 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. <b>Proper audit record shall be maintained by the firm. Audit of the manufacturing process of outsourced component in the manufacturing premises can also be carried out by the RDSO if desire.</b></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>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. <b>Outsourced process should be clearly marked in the process flow chart in QAP.</b></p>	<p>Agreed</p> <p>As the QAP is the record for assuring the Quality</p>
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<p>5.This STR shall be applicable to all new vendors applying for registration.</p>		<p>This STR shall be applicable to all new vendors applying for registration.</p>	<p>No Change</p>
<p>6. Except item no.2 and 3 of plant and machinery all other items are mandatory to be in house.</p>	<p>M/s Urban tekno system:-Except item no.2 and 3 of plant and machinery all other items are mandatory to be in house M/s Anu Vidyut:-Except item no.2 and 3 ,6 and 8 of plant and machinery all other items are mandatory to be in house</p>	<p>Except item no.2 and 3 of plant and machinery all other items are mandatory to be in house.</p>	<p>Not Agree, Except item no.2 and 3 of plant and machinery all other items are mandatory to be in house</p>