

**QUALITATIVE REQUIREMENTS (QRS) OF WATER MIST EXTINGUISHER 2X9/10LTRS
CAPACITY HIGH PRESSURE TYPE (MOTOR CYCLE MOUNTED)**

PART-I

Sl.	Technical Parameters	Qualitative requirements (QRs)
1.	Motor Cycle	Enfield Motorcycle or equivalent, BS-VI or above, 5 speed 350 cc, self start, Disc brake, PO Red in color, suitable for mounting of fire fighting equipment, Temp registration, insurance etc. shall be in the scope of motor cycle dealer/supplier.

PART-II

Sl.	Technical Parameters	Qualitative requirements (QRs)
1.	Nomenclature/ Name of product/gadget/equipment	High pressure water mist CAF fire extinguisher, back pack type, ultra-light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Pressure Vessel 9/10 ltrs capacity and Air Cylinder mounted, two Nos. mounted on Motorcycle.
2.	"Conformity to National/ International standard.	The Water Mist & CAF (Back Pack) high pressure extinguisher shall be confirmed to EN 3-7:2004+A1:2007-08 standards. The complete system shall be tested for compliance from an internationally / nationally Govt. accredited laboratory for compliance to all 30 clauses (3.2, 3.15, 4.2, 4.3, 4.4, 4.5, 6.1, 6.2, 6.3, 7.1.1, 7.1.2, 7.2, 7.3, 7.4, 8.1, 8.2, 9.2, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6.1 & 10.6.2, 14.1, 14.2, 15.2, 15.3, 16.1 & 16.2) of EN 3-7:2004 + A1:2007-08 (E). Standard mandatorily applicable for the complete system."
3.	Mounting type	Motor Cycle mounted but excluding motorcycle.
4.	Configuration/ Description	It shall be mounted on a sturdy frame suitable cushioned for comfort, provided with shoulder pads for carrying as backpack and a handle to be carried by hand. All materials used shall be of fire retardant type. Backpack shall be supplied with air cylinders.
5.	Model & Make	Model Number shall be permanently marked as declared in Govt. Accredited Laboratory Test Report.

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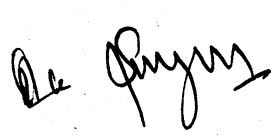
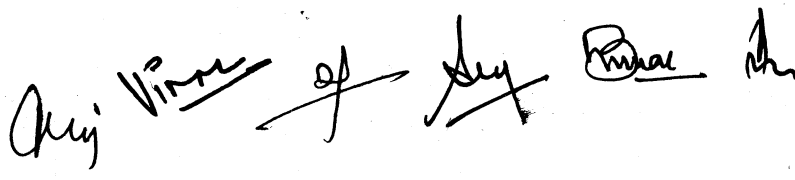
CONSTRUCTION:

Sl.	Technical Parameters	Qualitative requirements (QRs)
6.	Main Components	Pressure vessel shall be hold the media with safety valve, compressed air cylinder coupled with a reducer,hose pipes for discharge of water mist media extinguishing gun.
7.	Operating temperature (max and minimum)	System shall be designed for 60°C or more and minimum 5° C or less and certified by the manufacturer as per Clause 7.4 of EN 3-7:2004+A1:2007-08 standards as per the accredited test report for backpack system.
8.	Make, Model, accessories and fittings of the Motor cycle.	Configuration (Two backpacks each containing two air cylinder of 2 litre each shall be mounted on the motorcycle Royal Enfield or equivalent, BS-VI or above Motorcycle, 5 speed 350 cc, self start, Disc brake, PO Red in color, front windshield (2mm thick good quality transparent FRP), leg guard (made from 25mmdia 16 gauge nickel plated steel pipe), a Siren (12V 30 Amp audible at a distance of 200m), two blinking lights (12 V 20W each red lights with flasher), First Aid Box (cotton absorbent100gm, Band aid10 pcs., Burnol 2 pcs. Tincture Iodine 100 ml) and Gel blanket shall also be mounted on motorcycle. The motor cycle shall have space to store two air cylinders and breathing apparatus. The wind shield shall be duly marked with a logo as desired by the user.
9.	Model Number/ Laboratory Test Report etc.	Model Number shall be permanently marked as declared in Govt. Accredited Laboratory Test Report.
10.	Air Cylinders Capacity (Ltrs)	2 liters each
11.	No. of air Cylinder	4
12.	Air Cylinder pressure (Bar)	300 bar
13.	Air Cylinder Material	Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved.
14.	Type of Foam	Special AFFF Compound conforming for higher fire rating A55, B233, Spreading coefficient for special AFFF Compound shall be +5 minimum, concentrations shall be 6%.
15.	Composition of foam	If special foam, mention the composition/ Water 96% 1,2-Ethandiol.

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16.	Commercial Brand Name, laboratory test report/ fire rating with foam	Commercial Brand Name of the special foam (fire extinguishing medium) as per Govt. accredited laboratory test report wherein higher fire rating i.e. A55, B233, E1000V (Die Electric Suitability) achieved, to be declared.
17.	Characteristics of extinguishing medium of AFFF Compound with infrared spectrogram (to be furnished)	Characteristics of extinguishing medium of special AFFF compound shall be Density: 1.04 (kg/cm ³ , Viscosity : 1.35 (m ² /s), pH factor 7.8, Refractive Index 1.34 @ 20 ±2°C (Govt. accredited laboratory test report required).
18.	Fire rating etc.	Class A, Class B and Electrical Fire Rating with Special AFFF Compound for backpack 55A, 233B,E1000V (Die Electric suitability) with commercial brand name of fire extinguishing medium as per Govt. accredited laboratory test report for backpack system.
19.	Pressure Vessel Material & capacity (Nominal charge)	Pressure vessel material should be Ultralite Carbon Composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved having capacity 9/10 ltrs. Minimum wall thickness of pressure vessel shall be 5mm.
20.	Capacity (Nominal Charge)	9 liters each
21.	Extinguishing gun material	Stainless Steel
22.	Extinguishing gun weight	Shall not more than 750 ±50 gram.
23.	Length and standard of Hose	Hose shall be EN marked, not less than 1.3 meter for backpack system.
24.	Weight of fully charged Backpack system vessel having Ultralite Carbon Composite with liner made of PET/PA/HDPE/Aluminum or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Vessel.	Weight of each fully charged Backpack system having Ultralite Carbon Composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Vessel Shall not be more than 20 kg.
25.	Overall weight of the Two wheeler	The gross weight of the Two wheeler shall not be more than the permissible limit of the RTO carrying with Two pillions.



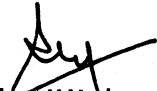
PERFORMANCE:-

26.	High Pressure Type Dynamic Operating pressure type, report etc. for Ultralite Carbon Composite vessel.	High Pressure Type (Dynamic Operating pressure to be tested in the Govt. accredited laboratory test report which will be considered as high pressure for as per clause No. 3.15 of EN3-7:2004 + A1:2007-08 (E) Standard.) ≥ 37.6 Bar for Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Vessel
27.	Lancing Distance of Gun	More than 15 $\pm$ 2 meter
28.	Temperature sustainability and standard	The air hoses shall be suitable for minus 40° C to 100° C temperature and EN mark on hose.
29.	Minimum operating time	25 $\pm$ 2 Second
30.	Fire Rating	55A ,233B, 1000V with AFFF Compound as per EN.

CERTIFICATION:-

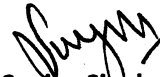
31.	PED approval as per Directive 97/23/EC	PED (Pressure Equipment Directives) approval as per 97/23/EC (Encumbrance Certificate).
32.	Pressure gauge	Pressure Vessel shall include a pressure gauge fitted on the vessel (CE Marked from notified body) to measure the air cylinder pressure.
33.	"No objection certificate (NOC) for Pressure Vessel from Petroleum and Explosives Safety Organization (PESO) Nagpur ."	No Objection certificate (NOC) for Air cylinder and its valve Pressure Vessel from Petroleum and Explosives Safety Organization (PESO)/ approval from CCE Nagpur is mandatory.
34.	Pressure Vessel should have CE Marking from Notified body	Pressure vessel shall be CE marked from notified body.
35.	The air cylinders shall have PESO, Nagpur approval	The air cylinder shall be approved by PESO, Nagpur. Certificate containing body No. shall be produced at the time of delivery (PDI).
36.	Specific consent of the OEM for the value additions	Specific consent of the OEM for the value additions made along with a confirmation that fire ratings of the equipment would not be affected by these value additions.
37.	Test Report as per EN Standard (serial number 1 above)	Test Report as per EN Standard serial number 1 above shall be produced.
38.	Test Report No.	Test Report No. should be declared.
39.	Test Report Date	Test Report date should be declared.
40.	Name of NABL/ Central Govt Accredited Laboratory where Test Conducted	The name of the NABL accredited or Central Government approved laboratory where the test was conducted shall be clearly indicated.

41.	NOC Letter No. Date of PESO Nagpur for Pressure Vessel	NOC Letter No. and date should be mentioned.
42.	Pre dispatch inspection	Pre Dispatch Inspection (PDI) of product shall be carried out by CISF Fire officer as per specification, at the vendor site where all the testing facilities are available.


Sh. S K Yadav
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Sh. Anil Kapoor
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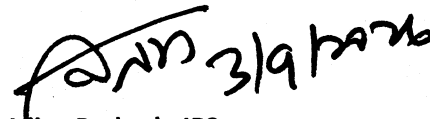

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Chairman


Director General/CISF

TRIAL DIRECTIVES (TDs) OF WATER MIST EXTINGUISHER 2X9/10LTRS CAPACITY
HIGH PRESSURE TYPE (MOTOR CYCLE MOUNTED)

PART-I

Sl.	Technical Parameters	Qualitative requirements (QRs)	Trial Directives for BOOs
1.	Motor Cycle	Royal Enfield or equivalent Motorcycle, BS-VI or above, 5 speed 350 cc, self start, Disc brake, PO Red in color, suitable for mounting of fire fighting equipment, Temp registration, insurance etc. shall be in the scope of motor cycle dealer/supplier.	Shall meet the requirement as per relevant standard and QRs. Firm has to provide certificate from OEM that there will no adverse effect on engine or chassis after modification and to be tested/ checked physically by BOOs.

PART-II

Sl.	Technical Parameters	Qualitative requirements (QRs)	Trial Directives for BOOs
1.	Nomenclature/ Name of product/gadget/equipment	High pressure water mist CAF fire extinguisher, back pack type, ultra-light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Pressure Vessel 9/10 ltrs capacity and Air Cylinder mounted, two Nos. mounted on Motorcycle.	To be checked and verified by BOOs and shall meet the requirement as per relevant standard and QRs.
2.	"Conformity to National/ International standard.	The Water Mist & CAF (Back Pack) high pressure extinguisher shall be confirmed to EN 3-7:2004+A1:2007-08 standards. The complete system shall be tested for compliance from an internationally / nationally Govt. accredited laboratory for compliance to all 30 clauses (3.2, 3.15, 4.2, 4.3, 4.4, 4.5, 6.1, 6.2, 6.3, 7.1.1, 7.1.2, 7.2, 7.3, 7.4, 8.1, 8.2, 9.2, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6.1 & 10.6.2, 14.1, 14.2, 15.2, 15.3, 16.1 & 16.2) of EN 3-7:2004 + A1:2007-08 (E). Standard mandatorily applicable for the complete system."	To be checked and verified with relevant EN certificates.

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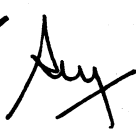
3.	Mounting type	Motor Cycle mounted but excluding motorcycle.	To be checked physically by BOOs.
4.	Configuration/ Description	It shall be mounted on a sturdy frame suitable cushioned for comfort, provided with shoulder pads for carrying as backpack and a handle to be carried by hand. All materials used shall be of fire retardant type. Backpack shall be supplied with air cylinders.	To be checked physically by BOOs.
5.	Model & Make	Model Number shall be permanently marked as declared in Govt. Accredited Laboratory Test Report.	To be checked physically and verified with relevant certificates.

CONSTRUCTION:

Sl.	Technical Parameters	Qualitative requirements (QRs)	Trial Directives for BOOs
6.	Main Components	Pressure vessel shall be hold the media with safety valve, compressed air cylinder coupled with a reducer,hose pipes for discharge of water mist media extinguishing gun.	To be checked physically by BOOs.
7.	Operating temperature (max and minimum)	System shall be designed for 60°C or more and minimum 5° C or less and certified by the manufacturer as per Clause 7.4 of EN 3-7:2004+A1:2007-08 standards as per the accredited test report for backpack system.	To be checked and verified with relevant EN certificates by BOOs.
8.	Make, Model, accessories and fittings of the Motor cycle.	Configuration (Two backpacks each containing two air cylinder of 2 litre each shall be mounted on the motorcycle Royal Enfield or equivalent Motorcycle, BS-VI or above, 5 speed 350 cc, self start, Disc brake, PO Red in color, front windshield (2mm thick good quality transparent FRP), leg guard (made from 25mmdia 16 gauge nickel plated steel pipe), a Siren (12V 30 Amp audible at a distance of 200m), two blinking lights (12 V 20W each red lights with flasher), First Aid Box	To be checked and verified by BOOs.





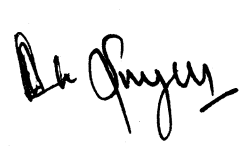
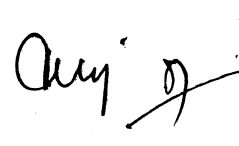
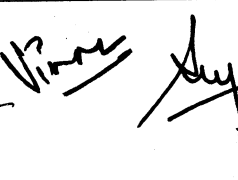





		(cotton absorbent 100gm, Band aid 10 pcs., Burnol 2 pcs. Tincture Iodine 100 ml) and Gel blanket shall also be mounted on motorcycle. The motorcycle shall have space to store two air cylinders and breathing apparatus. The wind shield shall be duly marked with a logo as desired by the user.	
9.	Model Number/ Laboratory Test Report etc.	Model Number shall be permanently marked as declared in Govt. Accredited Laboratory Test Report.	To be checked and verified by BOOs.
10.	Air Cylinders Capacity (Ltrs)	2 liters each	To be checked and verified with relevant EN and PESO certificates.
11.	No. of air Cylinder	4	To be checked physically by BOOs.
12.	Air Cylinder pressure (Bar)	300 bar	To be checked physically by BOOs.
13.	Air Cylinder Material	Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved.	To be checked and verified with relevant EN and PESO certificates.
14.	Type of Foam	Special AFFF Compound conforming for higher fire rating A55, B233, Spreading coefficient for special AFFF Compound shall be +5 minimum, concentrations shall be 6%.	To be checked and verified with relevant certificates from Govt approved lab.
15.	Composition of foam	If special foam, mention the composition/ Water 96% 1,2-Ethandiol.	To be checked and verified with relevant certificates from Govt. approved lab.
16.	Commercial Brand Name, laboratory test report/ fire rating with foam	Commercial Brand Name of the special foam (fire extinguishing medium) as per Govt. accredited laboratory test report wherein higher fire rating i.e. A55, B233, E1000V (Dielectric Suitability) achieved, to be declared.	To be tested physically and verified by BOOs and verified with relevant certificate from Govt. approved lab.

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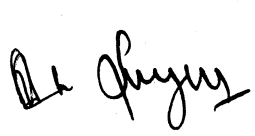
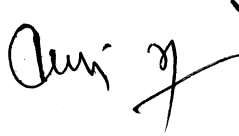
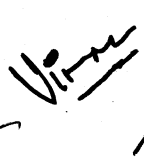
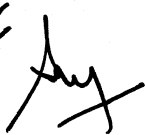


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17.	Characteristics of extinguishing medium of AFFF Compound with infrared spectrogram (to be furnished)	Characteristics of extinguishing medium of special AFFF compound shall be Density: 1.04 (kg/cm ³ , Viscosity : 1.35 (m ² /s), pH factor 7.8, Refractive Index 1.34 @ 20 ±2°C (Govt. accredited laboratory test report required).	To be checked and verified with relevant certificates from Govt. approved lab.
18.	Fire rating etc.	Class A, Class B and Electrical Fire Rating with Special AFFF Compound for backpack 55A, 233B,E1000V (Die Electric suitability) with commercial brand name of fire extinguishing medium as per Govt. accredited laboratory test report for backpack system.	To be checked and verified with relevant certificate as per EN from NABL accredited or Central Govt. approved lab.
19.	Pressure Vessel Material & capacity (Nominal charge)	Pressure vessel material should be Ultralite Carbon Composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved having capacity 9/10 ltrs. Minimum wall thickness of pressure vessel shall be 5mm.	To be checked physically and verified with relevant certificate by BOOs.
20.	Capacity (Nominal Charge)	9 liters each	To be checked physically and verified by BOOs.
21.	Extinguishing gun material	Stainless Steel	To be checked physically and verified with relevant certificate by BOOs.
22.	Extinguishing gun weight	Shall not more than 750 ± 50 gram.	To be checked physically by BOOs.
23.	Length and standard of Hose	Hose shall be EN marked, not less than 1.3 meter for backpack system.	To be checked physically and verified with relevant certificate by BOOs.
24.	Weight of fully charged Backpack system vessel having Ultralite Carbon Composite with liner made of	Weight of each fully charged Backpack system having Ultralite Carbon Composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material,	To be checked physically by BOOs.





	PET/PA/HDPE/Aluminum or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Vessel.	compliant with PED 97/23/EC, CE marking requirements and PESO approved Vessel Shall not be more than 20 kg.	
25.	Overall weight of the Two wheeler	The gross weight of the Two wheeler shall not be more than the permissible limit of the RTO carrying with Two pillions.	To be checked physically by BOOs.

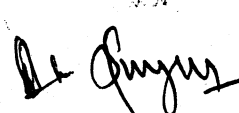
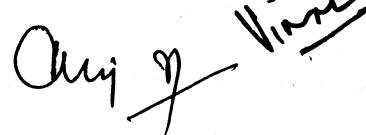
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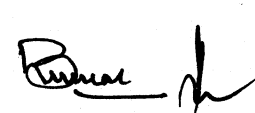
26.	High Pressure Type Dynamic Operating pressure type, report etc. for Ultralite Carbon Composite vessel.	High Pressure Type (Dynamic Operating pressure to be tested in the Govt. accredited laboratory test report which will be considered as high pressure for as per clause No. 3.15 of EN3-7:2004 + A1:2007-08 (E) Standard.) ≥ 37.6 Bar for Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Vessel	To be checked and verified with relevant certificate as per EN by BOOs.
27.	Lancing Distance of Gun	More than 15 ± 2 meter	To be checked physically by BOOs.
28.	Temperature sustainability and standard	The air hoses shall be suitable for minus 40° C to 100° C temperature and EN mark on hose.	To be checked and verified with relevant certificate as per EN by BOOs.
29.	Minimum operating time	25 ± 2 Second	To be checked physically by BOOs.
30.	Fire Rating	55A ,233B, 1000V with AFFF Compound as per EN.	To be checked physically and verified with relevant certificate as per EN by BOOs.

CERTIFICATION:-

31.	PED approval as per Directive 97/23/EC	PED (Pressure Equipment Directives) approval as per 97/23/EC (Encumbrance Certificate).	To be checked and verified with relevant certificate as per EN by BOOs.
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32.	Pressure gauge	Pressure Vessel shall include a pressure gauge fitted on the vessel (CE Marked from notified body) to measure the air cylinder pressure.	To be checked physically and verified with relevant certificate by BOOs.
33.	"No objection certificate (NOC) for Pressure Vessel from Petroleum and Explosives Safety Organization (PESO) Nagpur."	No Objection certificate (NOC) for Air cylinder and its valve Pressure Vessel from Petroleum and Explosives Safety Organization (PESO)/ approval from CCE Nagpur is mandatory.	To be checked and verified with relevant certificate by BOOs.
34.	Pressure Vessel should have CE Marking from Notified body	Pressure vessel shall be CE marked from notified body.	To be checked and verified with relevant certificate by BOOs.
35.	The air cylinders shall have PESO, Nagpur approval	The air cylinder shall be approved by PESO, Nagpur. Certificate containing body No. shall be produced at the time of delivery (PDI).	To be checked and verified with relevant certificate by BOOs.
36.	Specific consent of the OEM for the value additions	Specific consent of the OEM for the value additions made along with a confirmation that fire ratings of the equipment would not be affected by these value additions.	To be checked and verified with relevant certificate by BOOs.
37.	Test Report as per EN Standard (serial number 1 above)	Test Report as per EN Standard serial number 1 above shall be produced.	To be checked and verified with relevant certificate as per EN by BOOs.
38.	Test Report No.	Test Report No. should be declared.	To be checked physically by BOOs.
39.	Test Report Date	Test Report date should be declared.	To be checked physically by BOOs.
40.	Name of NABL/ Central Govt Accredited Laboratory where Test Conducted	Name of NABL/Central Govt. Accredited laboratory where test conducted is required.	Firm to submit certificates from NABL/Central Govt. Accredited laboratory for confirming. To be checked and verified by BOOs.
41.	NOC Letter No. Date of PESO Nagpur for Pressure Vessel	NOC Letter No. and date should be mentioned.	To be checked and verified with relevant certificate by BOOs.

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42	Pre dispatch inspection	Pre dispatch inspection of product shall be carried out by CISF Fire Officer as per QRs at the vendor site where all the testing facilities are available.	To be conducted by the BOOs at the site of the Vendor.
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Sh. S K Yadav
(AC/BSF)


Sh. Vimal
(DC/SSB)


Sh. Anil Kapoor
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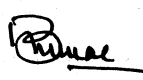

Sh. Sanjay Singh
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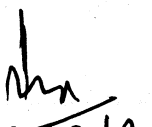

Manoj Kumar
(AC/CRPF)

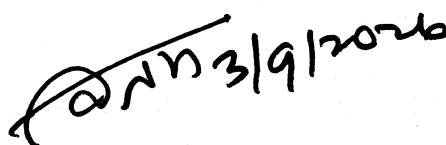

J P K. Sakhar
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Sh. Rajesh Shukla
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Sh. Pankaj Chawla
(Sc. "F"/CFEES -DRDO)


Sh. Binay Kumar
(AD/BPR&D)


Sh. Anil Sarin
(DIG/CISF)


Sh. Vijay Prakash, IPS
ADG (HQ)/CISF
Chairman


Director General/CISF