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भारत सरकार, गृह मंत्रालय/Government of India, Ministry of Home Affairs

महानिदेशालय/Directorate General

राष्ट्रीय आपदा मोचन बल/National Disaster Response Force

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Dated, the 27 July, 2017

### **REQUEST OF EXPRESSION OF INTEREST**

It is to inform that National Disaster Response Force (NDRF) intends to procure "A' Level Suit on the specification prepared by a detailed BOOs of NDRF having latest technology which is attached as Appendix – "A".

2. All the interested vendors/manufacturers are hereby invited to submit their comments / suggestion on the technical specifications of the equipment as mentioned in the Appendix – "A" to this HQ within 15 days from the date of issue of this expression of interest for further course of action.

Encl: Appendix – A ( 3 Leaves)

*Munesh Kumar*  
(Munesh Kumar)  
Dy. Commandant (Proc.)  
HQ DG NDRF

Copy to:

IT Cell, HQ NDRF for needful action please.

**APPENDIX-A**

**TECHNICAL SPECIFICATIONS OF "A" LEVEL SUIT**

SN	QR OF CHEMICAL PROTECTION SUIT
1	Suit should be gas tight, to provide protection against Gasses, Vapours, Aerosol and Liquid (CWAs and TICs) hazardous chemicals and Biological Warfare Agents.
2	The suit should be one piece fully encapsulation type 1A / level "A" gas tight suit covering both the wearer and the breathing apparatus. It should be overall suit, designed to enclose the wearer's complete body and SCBA.
3	Head area should be large enough to accommodate a SCBA face piece and to be able to allow user to wear a hard cap or firemen's helmet, with a provision to attach communication set.
4	Suit must be provided with an intrinsically safe, fireproof, hands-free Radio Set / Walky-Talky (VHF/ UHF) inside the suit for communication during operation.
5	The suit should contain a SCBA with a lightweight carbon steel/ Aluminium cylinder with capacity to allow continuous work for not less than 45 minutes. It should be able to give out alarm 15 minutes prior to exhaustion of air in the cylinder. <ul style="list-style-type: none"> <li>a. It should have minimum 15 years' service life and 3 to 5 years hydrostatic testing cycle.</li> <li>b. Light weight</li> </ul>
6	The suit should have extra connection for supplementary air through line supply. Suit should have Integrated ventilation system through one way valve.
7	The suit to be made up of Polyamide Fabric Tychem TK or equivalent. The material will be high visibility fluorescent orange color.
8	A long gas tight zipper should be fitted to the suit which enables easy donning and doffing. The zipper should be shrouded by two outer flaps which must be fastened together by means of a Velcro strip when suit is in use.
9	All seams to be double sealed hermetically both from inside and outside.
10	The gloves to be lined (outer Gloves with inner lining compatible with the suit material, with outer layer of Neoprene for extra protection. The gloves to be fitted by means of locking cuff mechanism, 2 Spare Pairs of Gloves shall be supplied with each suit.
11	The boots to be permanently sealed to the suit. The boot to be highly chemically resistant providing a degree of protection against mechanical hazard. Safety boots with steel toe cap and mid sole. The main features of boots to include. <ul style="list-style-type: none"> <li>a) Should have a BTT for chemicals/ gasses/ aerosols not less than that of the suit</li> <li>b) Not less than 200 Joule Steel toe cap.</li> <li>c) Cleated Slip Resistant Sole.</li> <li>d) Injection molded seamless construction.</li> <li>e) Non-absorbent polyester lining.</li> <li>f) Kick off lug for easy removal.</li> <li>g) Stainless steel midsole.</li> <li>h) Cleated, oil Resistant Rubber outsole for superior grip.</li> <li>i) Exothermic insole for maximum wearer comfort.</li> <li>j) Antistatic.</li> </ul>
12	The visor to be double glazed permitting clear undistorted vision that will withstand chemical permeation for the substances listed in the European standard EN464:1994 for more than 480 minutes: the mechanical strength of the visor should conform to EN146:1991. The visor to be impact resistant. The visor to provide a wide view of vision.
13	The suit to be supplied with adjustable internal support belt to enable wearers of varying size for comfortable use.
14	The suits to be available in S/M/L/XL size depending on the order.



15	The suit to be light in weight & comfortable to wear.
16	Each suit to be supplied in a suitable rigid Box/ case to store it when not in use and should have shelf life of minimum five years.
17	The suit should comply with EN464:1994 for Protective Clothing. Suit should conform to EN 943-1 for (gastight type 1a/ Level A), EN 943-2 for (Emergency Teams), EN 1073-2 for radioactive particles, EN 14126 for infective agents and EN 1149-5 for Electrostatic Properties.
18	The suit should have more than 8hrs (480 minutes) breakthrough time against the given chemicals as per Appx. - "A".
19	Operation/Maintenance manual to be supplied with each suit with indicative BTT for different chemical environment.



<b>Chemical</b>	<b>Breakthrough Time (Minutes)</b>
Acetone	>480
Acetonitrile	>480
Carbon Disulfide	>480
Dichloromethane	>480
Diethylamine	>480
Dimethylformamide	>480
Ethyl Acetate	>480
n - Hexane	>480
Methyl Alcohol	>480
Nitrobenzene	>480
Sodium Hydroxide	>480
Sulfuric Acid	>480
Tetrachloroethylene	>480
Tetrahydrofuran	>480
Toluene	>480
<b>GASES</b>	<b>Breakthrough Time (Minutes)</b>
Ammonia Gas	>480
1,3 Butadiene Gas	>480
Chlorine Gas	>480
Ethylene Oxide Gas	>480
Hydrogen Chloride Gas	>480
Methyl Chloride Gas	>480
<b>Chemical Agent</b>	<b>Breakthrough Time (Minutes)</b>
Bis (2-chloroethyl) sulfide (Mustard :HD)	>480
Isopropyl methyl fluorophosphate (Sarin :GB)	>480
Chlorovinyl arsine-di-chloride (Lewisite:L)	>480
O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (Nerve :VX)	>480

