

F.No. P-63013/27/2013-Ord/BSF/MHA-Prov-I 9850  
Bharat Sarkar/Government of India  
Griha Mantralaya/Ministry of Home Affairs  
PM Division

26, Man Singh Road, Jaisalmer House  
New Delhi, Dated 16 December, 2014

To,

DsG: AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

**Subject: QRs and Trial Directive for Clear water anywhere under the Sun/solar powered water filtration plants system/solar water filter 7 stage.**

The QRs and Trial Directives in respect of Clear water anywhere under the Sun/solar powered water filtration plants system/solar water filter 7 stage as per Annexure have been accepted by the Competent Authority in MHA.

2. The CAPFs concerned will be accountable for correctness of the QRs/Trial Directives.

3. Henceforth, all the CAPFs should procure the above item required by them strictly as per the laid down Technical Specifications/QRs.

Yours faithfully,

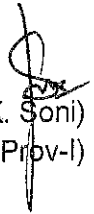
Encl: As above

  
(P.K. Srivastava)

Under Secretary to the Govt of India  
Tel: 23381278

Copy forwarded for necessary action to :-

The Section Officer (IT), MHA: It is requested to host the QRs and Trial Directives (soft copy attached) on the MHA website (under the page of Organizational Set up- Police Modernization Division- Qualitative Requirement under Miscellaneous Equipments.

  
( R.K. Soni)  
Section Officer (Prov-I)

Copy to: <sup>DDG</sup> Director (Procurement), MHA.

O/C

**DIRECTOR GENERAL BORDER SECURITY FORCE**  
**PROVISIONING DIRECTORATE (ORD SECTION)**

The Sub-group of Technical Experts on Solar Water filtration system constituted by MHA vide their letter No. IV-24011/12/2011-Prov-I dated 13 Jun 2012, No. IV-24011/12/2011-Prov-I dated 28 Dec 2012 & UO No. IV-24011/12/2011-Prov-I- 350 dated 27 Jun 2013 held its meeting at BSF Headquarters on 30<sup>th</sup> Oct 2013, 26<sup>th</sup> Dec 2013, 05 Feb 2014, 17 Apr 2014 & 06 June 2014 to finalize the Qualitative Requirement of Clear Water anywhere under the Sun/ Solar Powered Water Filtration plants System/Solar Water Filter 7 Stage for ITBP/NSG & SSB respectively.

After detailed deliberations the referred Sub-group has finalized the QRs which are as under:-

**QUALITATIVE REQUIREMENT OF CLEAR WATER ANYWHERE UNDER THE SUN/**  
**SOLAR POWERED WATER FILTRATION PLANTS-SYSTEM/SOLAR WATER**  
**FILTER 7 STAGE**

SL NO	SPECIFICATIONS
1	System should provide minimum 7000 liters of drinking water per day (24HR) from a water source at 5 to 10 meters. The wastage of water in filtering process should not be more than 1% with automatic backwash system. System operating temperature should be +2 to + 50 degrees.
2	Pump motor should have all safety features built-in: a) Dry running protection b) Over voltage and under voltage protection c) Over load protection d) Over temperature protection
3	System should use minimum 7 steps to clean the water point by point :- a) Dirt debris b) fine particulates c) metallic compounds d) Organic particle e) Bacterial f) viral contamination g) Arsenic compound , pesticide or toxic compounds ✓
4	No harmful or hazardous chemicals should be used in the filtration process
5	All filter media and hardware are of EPA and NSF approved products and meet or surpass EPA or WHO standards for potable drinking water as per BIS standards IS 10500 : 2012 or latest. The final out put of water from system must be in accordance with acceptable limit of BIS standards IS 10500: 2012 or latest.
6	Simple backwash mechanism should help maintain optimal system operation when in field. (trial demonstration )
7	Adsorption media in the system should clean highest level of arsenic (III & V), lead, cadmium, iron and heavy metal contamination in water.
8	Adsorption media should last for 4 years or more before replacement. All filtration housing should be of stainless steel.
9	The bacteriological filter cartridges used in the system should be easily cleaned in the field by pressure steam cleaning or cleaning with a chlorine solution.
10	a) The system should have power back up from sealed maintenance free batteries or batteries of better technology of 12/24volt for minimum 4 hrs and charged by solar panel of 100 watt suitable

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*(Handwritten signatures and initials)*

	b) System should be able to run on regular AC/DC 12/24 volt power source if needed. c) system should be rain protected
11	Complete System should be housed in a robust structure of stainless steel with wheels less than 35 (inch) L x 35 (inch) W x 45 (inch) H in dimension and weight less than 160 kg ( including the structure) able to move for loading and offloading on to truck, trolley, aircraft, train. System should be forklift ready. System will come with extra spare tools kit including 2 spare UV filtration light and handheld torch
12	Operator level training and maintenance level training of minimum 15 days to be provided by OEM to user to independently maintain and operate the system as per company SOP for daily use. On site support should be provided within one week in case of breakdown. System control design should be user friendly and easy to operate.
13	Minimum 2 year warranty to be provided for the system on any manufacturing defects and Company to provide system support at site in case of breakdown of system. Bidder will support with 10 year shelf life operational cycle after the warranty (AMC and service contract after 2 year warranty).
14	Optional items to be provided as per the user requirement at the time of tender :- a) Aircraft drop kit. b) Extra well drop pipe. c) Collapsible water storage bladder tank (Pillow tanks) d) De- salination.
15	Water testing kit to be provided which must be able to detect following parameters : a) Bacteria b) Lead c) Pesticides d) Nitrates e) Chlorine f) Ph level g) Water hardness

06/6/14  
(B. C JOSHI) SIG, BIF SIW

AD (Am) UROP

INSPT MANISH RAO

(KAVESH KUMAR) TE, NSG

(SUMIT GUPTA), PSO (E), BPR&D

INSPE RAJEEV DANIYA, CISF

(RAJESH LUTHRA) AC  
IT BP

(DINESH KUMAR) IOB, SSO

(RAVI RANJAN) AC, SSO

APPROVED/ NOT APPROVED

(D K PATHAK), IPS  
DIRECTOR GENERAL  
BORDER SECURITY FORCE

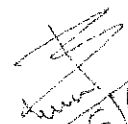
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**TRIAL DIRECTIVES OF CLEAR WATER ANYWHERE UNDER THE SUN/ SOLAR POWERED WATER FILTRATION PANTS-SYSTEM/ SOLAR WATER FILTER 7 STAGE.**

QR Clean water anywhere under the sun / solar powered water filtration plants –system / solar water filter 7 stage	TRIAL DIRECTIVE
1) System should provide minimum 7000 liters of drinking water per day (24HR) from a water source at 5 to 10 meters. The wastage of water in filtering process should not be more than 1% with automatic backwash system. System operating temperature should be +2 to + 50 degrees.	1) Connect the system to the water source at input pipe & output pipe to a water tank (10,000L) and run the system for 24 hr with solar power and AC/DC power source when needed and collect 7000L in a clean tank with water wastage not more than 1%. (Tender company to provide the pipes & storage tanks for trials) 2) System should be able to pump water from within a minimum depth of 5 meters to a tank of capacity 10000 Ltr of underground tank / open source of water or direct water supply from water supply system. 3) Drinking Water test to be conducted by Testing Lab having ISO 9001 certification and NABL accreditation to pass acceptable limits of BIS IS 10500 drinking water specification 2012 or latest. Water sample to be collected by the Testing Lab during the trials. 4) OEM to certify the operating temp
2) Pump motor should have all safety features built-in: a) Dry running protection b) Over voltage and under voltage protection c) Over load protection d) Over temperature protection	To be physically checked by the BOO and OEM to provide certificate in commensuration with QR no 2
3) System should use minimum 7 steps to clean the water point by point :- a) Dirt debris b) fine particulates c) metallic compounds d) Organic particle e) Bacterial f) viral contamination g) Arsenic compound , pesticide or toxic compounds	a) Perform the minimum 7 steps of water purification point by point along with the testing of output water at each stage to showcase the effectiveness of each stage to clean the water from contamination as per QR no 3  b) Lab test of water from each stage will be carried out by the BOO and final clean water output as per BIS latest standards
4) No harmful or hazardous chemicals should be used in the filtration process	Certificate to be provided by the OEM filter media manufacturer.
5) All filter media and hardware are of EPA and NSF approved products and meet or surpass EPA or WHO standards for potable drinking water as per BIS standards IS 10500 : 2012 or latest. The final out put of water from system must be in accordance with acceptable limit of BIS standards IS 10500: 2012 or latest.	1) Filter media and Hardware Certifications from NSF International to be provided. BOO will physically check the certificate.- 2) Water Test report from national or international accredited lab to be provided for the water test result to meet or surpass the US EPA or WHO standards by the OEM. BOO will physically check the certificate. 3) All water samples taken during the trials will have to meet or surpass the BIS latest standards for drinking water. BOO will physically check the certificate.

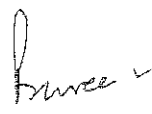
<p>6) Simple backwash mechanism should help maintain optimal system operation when in field. (trial demonstration)</p>	<p>1) After performing the point 1(1), Take the water sample and demonstrate the Backwash mechanism to maintain system operation. BOO will physically check.</p>
<p>7) Adsorption media in the system should clean highest level of arsenic (III &amp; V), lead, cadmium, iron and heavy metal contamination in water.</p>	<p>1) OEM (Adsorption media) lab test certificate to be provided. 2) OEM (Adsorption media) LAB test report of <b>water output meeting or surpassing the US EPS arsenic standard of 10 parts per billion to be provided.</b> BOO will physically check</p>
<p>8) Adsorption media should last for 4 years or more before replacement. All filtration housing should be of stainless steel.</p>	<p>1) System supplier to certify for duration of adsorption media. BOO will physically check 2) Physical inspection of system &amp; supplier to certify the stainless steel. BOO will physically check</p>
<p>9) The bacteriological filter cartridges used in the system should be easily cleaned in the field by pressure steam cleaning or cleaning with a chlorine solution.</p>	<p>1) After running the system for 2 days, perform the live test of cleaning with chlorine solution or steam. BOO will physically check 2) Take water sample after running the system for 1 Hr , which should meet or surpass BIS standards. BOO will physically check</p>
<p>10. a) The system should have power back up from sealed maintenance free batteries or batteries of better technology of 12/24volt for minimum 4 hrs and charged by solar panel of 100 watt suitable b) System should be able to run on regular AC/DC 12/24 volt power source if needed. c) system should be rain protected</p>	<p>1) Physical check of 1 solar panel which fits inside robust structure of the system should be done with the rain/dust cover on the system 2) System provider will demo the system runs on solar panel, then only with battery and last with direct AC or DC power to check system runs independently on either of the power source. BOO will physically check  3) System should be able to run for 24 hr with combination of battery power charged by solar panel and AC / DC power. BOO will physically check  4) OEM to provide certificate of the solar panel capacity (100 W) and measure the capacity during the trial and measure the capacity with a e-meter. BOO will physically check</p>
<p>11) Complete System should be housed in a robust structure of stainless steel with wheels less than 35 (inch) L x 35 (inch) W x 45 (inch) H in dimension and weight less than 160 kg ( including the structure) able to move for loading and offloading on to truck, trolley, aircraft, train. System should be forklift ready. System will come with extra spare tools kit including 2 spare UV filtration light and handheld torch</p>	<p>1) Physical dimension check to be done. 2) Weight checks to be done. 3) Ready the system on wheels and move the system. Load the system to truck with ramp and unload, then test can be done on train, aircraft (IL-76), helicopter M17, loading and unloading. 4) System provider to arrange for forklift to check design of the system, so that it is fork lift ready for loading and unloading for truck, train, aircraft. BOO will physically check 5) Tool inspection to be done. 6) Physical check for spare 2 UV filtration light and handheld torch.</p>
<p>12) Operator level training and maintenance level training of minimum 15 days to be provided by OEM to user to independently maintain and operate the system as per company SOP for daily use. On site support should be provided within one week in case of breakdown. System control design should be user friendly and easy to operate.</p>	<p>QRs clause Srl No.12 to be incorporated in the tender</p>

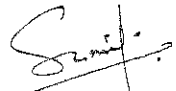
<p>13) Minimum 2 year warranty to be provided for the system . any manufacturing defects and Company to provide system support at site in case of breakdown of system. Bidder will support with 10 year shelf life operational cycle after the warranty (AMC) and service contract after 2 year warranty.</p>	<p>1) System provider will certify warranty. Note: AMC details to be provided by the vendor</p>
<p>14) Optional items to be provided as per the user requirement at the time of tender :- a) Aircraft drop kit. b) Extra well drop pipe. c) Collapsible water storage bladder tank (Pillow tanks) d) De- salination.</p>	<p>Each user to mention their demand for extra accessories if needed during the tender and BOO will check the system during the tender as per the requirement of the user force.</p>
<p>15) Water testing kit to be provided which must be able to detect following parameters : a) Bacteria b) Lead c) Pesticides d) Nitrates e) Chlorine f) Ph level g) Water hardness</p>	<p>BOO to check the system if the submitted kit is able to check the following contamination in water : a) bacteria b) lead c)pesticides d) nitrates e) chlorine f) Ph level g) water hardness</p>


  
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AD (P) CRP


  
INSPIR MANISH RAS

  
(PARVEEN KUMAR) IC, NSG


  
(SUMIT GUPTA) PSO(E), BPR&D INSPIR/E RAJEEV DANIYA, CISP.

  
(RAJESH LUTHRA) AC  
IT BP

  
(DINESH KUMAR) IOA, SSB

  
(RAV RANJAN) AC, SSB

APPROVED/ NOT APPROVED

  
(D. K PATHAK), IPS 318114  
DIRECTOR GENERAL  
BORDER SECURITY FORCE