

Ref: BHE/PW/PUR/RGMT-ESP R&M U1 U2 U3 /2302/Corg-03

Date: 20/08/2020

To

ALL BIDDERS,

Sub: Corrigendum-03: Clarifications

JOB: DISMANTLING OF EXISTING ESP INTERNALS AND OTHER COMPONENTS, DISPOSAL OF THE SAME TO SCRAP YARD, COLLECTION OF MATERIALS FROM BHEL/ CLIENT'S STORES/ STORAGE YARD, TRANSPORTATION TO SITE, ERECTION, TESTING & ASSISTANCE FOR COMMISSIONING, TRIAL OPERATION AND HANDING OVER OF ESP AND ITS AUXILIARIES, INCLUDING DUCT SUPPORTING STRUCTURE, ESP OUTLET DUCT, LINING & INSULATION, FINAL PAINTING AND COMPLETE ELECTRICAL WORK ETC FOR THE WORK OF RENOVATION & RETROFITTING OF ESP PACKAGE FOR STAGE-1 (3 X 200 MW, UNIT#1,2&3) ESP R&M PROJECT AT NTPC LTD, RAMAGUNDAM, TELANGANA STPP, DISTRICT-KARIMNAGAR, STATE-TELANGANA.

Reference:

1) E-Tender Specification Number: E-Tender Specification Nos: BHE/PW/PUR/RGMT-ESP R&M U1 U2 U3 /2302

Bidders to kindly take note of the following:

AA) Clarifications:

Sr No	Reference Clause of Tender Document	Bidder's Query	BHEL's Clarification
1	General Query	In reference to the subject tender we would like to seek clarification on the part of mandatory 14-day quarantine rule set by government. As we are working with BHEL in other projects too, the place and wage/food for quarantine of labor is being provided by BHEL/Owner. Hence, we seek confirmation from BHELs end that the same shall be provided if in case authorities decide to quarantine our labours.	BHEL would like to clarify that no such facilities will be provided by BHEL. Bidder has to make its own arrangement for labours during quarantine period. Suggestive SOP of NTPC Ramagundam is attached herewith for your reference

BB) Following additional Documents are attached and same shall be part of Tender.

1. Operation Control Procedure
2. Standard Operating Procedure for Work Resumption after Lock down

All other Terms and conditions of the Tender Specification shall remain unaltered unless expressly amended by BHEL in writing. Bidders are requested to submit as a part of their offer, a copy of this corrigendum duly Digitally countersigned by the authorized signatory as a token of Bidder's unqualified acceptance of this corrigendum.

BIDDERS MAY PLEASE NOTE THAT SUBJECT TENDER IS E-TENDER AND THE OFFER IS TO BE SUBMITTED ONLY IN E-PROCUREMENT PORTAL→ www.bhel.abcprocure.com

BIDDERS WHO HAVE ALREADY SUBMITTED THEIR OFFERS PRIOR TO ISSUANCE OF THIS CORRIGENDUM IN E-TENDER PORTAL ARE REQUIRED TO RE-SUBMIT THEIR OFFER AFTER TAKING COGNIZANCE OF THIS CORRIGENDUM.

Thanking you,
Yours faithfully,

AGM (Purchase)

Encl:

1. Suggestive Standard Operating Procedure for deployment of Contract Labours coming from outside (NTPC)
2. Operation Control Procedure
3. Standard Operating Procedure for Work Resumption after Lock down

Suggestive Standard Operating Procedure for deployment of Contract Labours coming from outside (NTPC)

Contract labours are expected at Ramagundam site from different Parts/States of India as per plan submitted by different agencies. Considering the prevailing situation across the country, it is of utmost important to ensure that labours are healthy and does not have any other medical issues before deploying them at site for work. All necessary precautions are to be taken by concerned agency(ies) on this issue.

It is to mention that the SOP given below is suggestive and indicative. Agencies can implement additional measures as required to further improve / strength the same.

1. Agencies are required to create Quarantine facilities on their own.
2. Agencies are required to submit detailed information well in advance to NTPC about the contract labours arrival to Ramagundam.
3. Agencies may also inform the labours details to local administration as per requirement of District authorities
4. Agency shall arrange Doctor who will medically examine the labourers immediately after arrival at the Quarantine facilities arranged by Agencies.
5. Agencies shall collect self declaration from workers to confirm that they are not coming from “containment zone”, not having Fever history etc.
6. Agencies shall arrange mask, First aid kit, soap, beddings etc at the Quarantine facilities for the labours.
7. If anybody found with Fever & Cough History or from “containment zone”, he may be referred to Area Hospital (Govt) or sent back.
8. Doctor, arranged by the agencies, will visit on regular basis to conduct and monitor regular health check up of workers accommodated in the Quarantine facilities created by Agencies.
9. NTPC Doctor may also medically examine the labours in between and on 14th day of every batch after agency doctor declared them fit for work.

**Suggestive Standard Operating Procedure for deployment of Contract
Labours coming from outside (NTPC)**

10. Agency shall provide security/caretaker with Temperature scanner, Register, attendant for supply of provisions, medicine etc round the clock for their workers at Quarantine facilities. Workers are not be allowed to go out of the facilities until they are declared fit.
11. If any person develops any Covid-19 Symptom, he will be taken to the nearest Area Hospital (Govt) by the agencies. If Hospital recommends for Quarantine at home, Agency has to make that arrangement.
12. Agency is to display emergency contact details of their representatives in the Quarantine facilities.
13. Agency is to provide food arrangement for the workers accommodated in the Quarantine facilities.
14. Agency has to ensure daily cleaning of respective area Quarantine center.
15. The mask, gloves, vegetable wastes are to be put in designated Bins and to be disposed off safely.
16. Adequate care shall be taken by agencies to avoid sharing of accommodation by new incoming group with already existing groups.



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 1 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

Purpose	<ul style="list-style-type: none"> ➤ To resume work in a safe manner after Lock down due to COVID-19 Outbreak ➤ To ensure health & safety of personnel and prevention of infection during operations ➤ To ensure HSE Management & Control during operations 	Scope	PS Regions
Background	<ul style="list-style-type: none"> ➤ The purpose of this procedure is to resume construction works at BHEL project sites in the event of 'Construction activities' being permitted by the Government/District Administration/Statutory Authorities. ➤ By following this OCP the chain of corona spread will largely be contained and works can be done safely. ➤ All precautionary measures are to be ensured at site and labor colonies so that the labor force feels safe and secure at work place and act in a productive manner. ➤ This OCP also lays down guidelines to handle cases of infection 		
Applicability	<ul style="list-style-type: none"> ➤ This OCP applies to all BHEL employees and its subcontractors working at project sites. ➤ It also covers guidelines for medical personnel, security personnel, visitors and others 		
Responsibility	Concerned Site In-charge / Site HSE Head/Package Head		
Performance Criteria	Number of cases of violations from these guidelines. All violations must be recorded and compliance for the same immediately/ within day		
References	<ul style="list-style-type: none"> ➤ Corporate HSE Circular BHEL:CO: SOP: COVID-19 : 01 ➤ Corporate Guidelines regarding disinfection for Prevention of CQVID-19 in BHEL Offices, Townships, Hospitals, Factories and other common places (No. AA:HR:MR 1 (C) dated 20-03-2020) ➤ OHSAS : 18001 , ISO : 14001:2015, ISO 45001:2018 ➤ ICMR & WHO Guidelines for COVID 19 ➤ Govt. of India Guidelines being issued from time to time ➤ Guidelines issued by National Centre for Disease Control and other agencies of Govt. of India ➤ WHO Guidelines being issued from time to time 		

Prepared by	Reviewed by	Approved By
Task Force: Rohit Kumar, SM/ PSHQ-HSE Nitesh K. Meena, DM/ PSNR-HSE Saswajeet Raut, SE/PSER-HSE Navin Sadh, SE/ PSWR-HSE Sandeep Dalal, SE/ PSSR-HSE	HSE Heads/ PS-Regions: S. C. Meena, AGM/ PSNR B Tirkey, AGM/ PSER R. O. Jadho, AGM/ PSWR Mukesh Shrivastava, AGM/ PSSR	Head/ HSE, PSHQ: Santosh Nair, GM



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

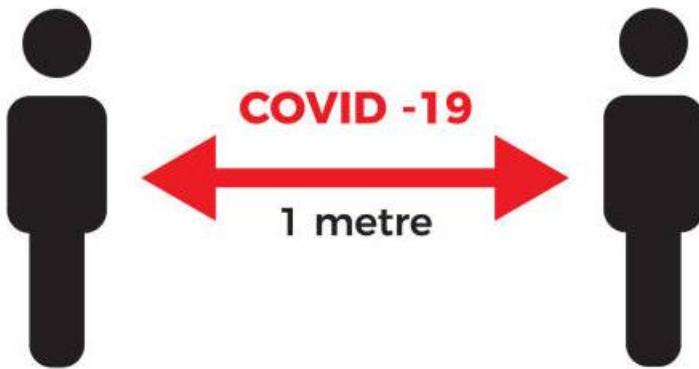
Page 2 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

General PPEs & Precautions

Maintain Social Distance of at least 1 meter **Minimum (more the better)**



Precautions at all times is necessary. Even a single lapse can lead to infection

	Face shield/ mask must be worn by all at all times and disposed/ cleaned properly		Protective clothing must be worn		Protective gloves as identified in Safety Data Sheet
	Appropriate footwear with substantial uppers must be worn		Mandatory requirements are specified and must be followed. Report any accidents.		
	Spray to disinfect personal items/ areas		Spray to disinfect public places/ infrastructures/ tools etc.		Strictly No Shaking Hands

	Hazmat suits and special PPEs for medical personnel and other officials with more probability of coming into contact with infected		Strict security & control at Gate to avoid entry into site/office premises of infected persons and persons without necessary PPEs, unauthorized personnel, animals etc.
--	--	--	---



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 3 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

General

1. This procedure is applicable for all personnel working at Project Site, including staff, workers, officials, medical and security personnel, cleaners, housekeeping staff etc. It also includes visitors including drivers, cleaners, doctors, nurses, etc. entering the site premises
2. These are broad guidelines that may be followed in order to ensure the purpose of this OCP is met.
3. The procedure refers specifically to COVID-19 disease caused by SARS-CoV-2 Virus, but is applicable to similar highly infectious respiratory illnesses as well
4. This procedure is branches out of Corporate HSE Circular **BHEL: CO: SOP: COVID-19: 01 – ‘Standard Operation Procedure for Work Resumption after Lockdown’**. In case of any ambiguity & duplicity, Corporate HSE Circular & Guidelines **and Govt. guidelines** to be followed
5. This procedure is necessary to ensure continuation of business operations in order to avoid mandatory lockdown due to an infection. All precautions to be taken seriously due to the contagiousness and mortality rate of this disease. Even a slight lapse can lead to infections and shut down of site operations for the mandatory notified period
6. The physical distancing guidelines of minimum 1 m indicated in this document to be reviewed in line with latest Govt. guidelines and ensured appropriately

Detailed Procedures & Controls are given below

Procedures and Controls		
S No	Activity	Responsibility
1	<p><u>Deployment/ Nomination of COVID Marshall</u></p> <p>a. BHEL and Agencies shall nominate COVID Marshalls, who will be responsible for monitoring the COVID prevention measures and apprising management on the same.</p> <p>b. Every agency shall nominate COVID Marshall, who shall report to BHEL COVID Marshall</p> <p>c. BHEL COVID Marshall shall be nominated by Site In-charge in consultation with Site HSE Head.</p> <p>d. BHEL COVID Marshall shall be the Nodal COVID Marshall for the site, and having overall responsibility.</p>	Agency, BHEL
2	<p><u>Directions for Newly Joining Workers/ Officials</u></p> <p>a. Mandatory health check-up for every worker/ official joining the site</p> <p>b. An undertaking to be submitted by every worker/ official which shall specify if he/she had been in contact with a Covid-19 positive case, and other health-related details (as per Format HSEOCP61-F01)</p> <p>c. All newly joining workers/ officials, shall follow the applicable procedures/ guidelines as laid out by Govt./ statutory authorities pertaining to quarantine, prior to joining work</p>	Agency, BHEL
3	<p><u>Routine HSE Management Activities During COVID-19</u></p> <p>a. Due to the stress on existing medical facilities due to COVID-19 pandemic, it is imperative to take utmost precautions and avoid any incidents during operations.</p> <p>b. All activities to be carried out in safest manner possible with all necessary precautions.</p> <p>c. All activities to be carried out using least amount of paperwork and physical proximity as far as possible. The methodology to issue Permit etc. can be decided by Site Management. All necessary precautions before starting activity to be ensured and regularly monitored by concerned execution and HSE Team.</p>	Agency, BHEL



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 4 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

	<p>d. As far as possible, meetings & classroom trainings to be avoided. Essential meetings can be carried out by following the relevant guidelines</p> <p>e. HSE Observer App to be used to monitor HSE Activities and follow up with agencies for closure of non-conformities. Follow up can also be carried out through Phone/ Video Call etc.</p> <p>f. Apart from monitoring of HSE requirements, monitoring of COVID-19 precautions by workers and BHEL and Agency Officials also to be carried out</p>	
4	<p><u>Strict Control at Gates</u></p> <p>a. Strict Control at the Gate/ Banning Entry to Anyone Not Wearing Masks</p> <ul style="list-style-type: none"> i. Security personnel at the gate may erect a barricade preferably approx. 10 meters from the gate and only allow personnel who are wearing proper masks inside. ii. Public address system may be used to warn any non-compliant visitors iii. Near entry gate, round markers at minimum 1-meter distance to be ensured so that distancing is ensured iv. A hand-wash or hand sanitiser facility is preferable at the gate to allow entry after hand wash or hand sanitisation. These are also to be provided at key locations to enable hand wash / hand sanitisation before starting work, before eating, etc. v. Gutkha, Paan, tobacco etc. to be banned from the site. Spitting to be strictly prohibited. <p>b. Screening at Gate with Contactless Thermometer & Action on Suspected Cases</p> <ul style="list-style-type: none"> 1) Security Personnel at the Gate to screen each person entering the premises using a non-contact infrared thermometer, which is duly serial numbered and calibrated. 2) In case any site worker/ official is found to have fever more than 99 Degrees Fahrenheit or found coughing/ sneezing, he/she may be advised rest till recovery and entry to be permitted after obtaining clearance from medical officer/assistance/attendants. <p>c. Any parcel/courier person should be stopped at gate only. Parcel to be collected from gate by concerned person preferably with provision of Special Box (wood/metal/plastic or the like) that can be sanitized daily. A provision of drop box at front of BHEL site office may also be deployed for receiving document like letter/invoice, etc. Parcels to be properly sanitized prior to opening.</p> <p>d. Any construction material received at site, unless properly sanitized, to be kept undisturbed for at least 3 days and to be used only after that period.</p> <p>e. Ensure that number of persons coming inside and going outside is matching, agency wise.</p> <p>f. Visitor entry in site office to be avoided as far as possible.</p>	Security, Agency, BHEL
5	<p><u>Maintaining Strict Social Distancing during site/office activities – minimum 1 meter distance between any two personnel to be Enforced Strictly</u></p> <p>a. During meetings, classroom training programmes like induction training and on-the job training, toolbox talks and other gatherings, following precautions may be ensured:</p> <ul style="list-style-type: none"> i. Preferably, such meetings to be avoided and communication carried out through other means (email, phone, pamphlets etc.) ii. At door, hand sanitizer or soap and water to be ensured for sanitizing hands during entry & exit by each individual iii. Only limited number of personnel to be called in training/ meeting, so as to ensure distance of minimum 1 meters between two participants iv. Each participant to wear mask 	Agency/ BHEL



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 5 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

	<p>v. In case any individual is symptomatic/ coughing/ sneezing, he/ she may be taken to quarantine area by the medical/ first aid personnel, and medical assistance sought from specialized hospital, etc</p> <p>vi. Persons may be allowed to attend the induction training/ meeting only after temperature screening if felt necessary.</p> <p>b. Social Distancing During Toolbox Talks</p> <p>During Toolbox Talks, minimum 1 meter distance between any two workers to be ensured</p> <p>c. During site execution activities:</p> <ul style="list-style-type: none">i. For all site execution activities, social distancing is to be maintained. In case this is not possible due to nature of work, speciality of work, etc, ensure sensitisation of the labour/staff involved and use of appropriate PPEs, especially mandatory face mask. In any case, close working to be allowed only in special circumstances and ensuring these activities are preferably time staggered to the extent possibleii. Ensure hand wash / hand sanitisation facility at key places and these are topped up regularly <p>d. In office premises:</p> <ul style="list-style-type: none">i. Sharing of items like pens, water bottles etc. in office premises to be avoidedii. Seating arrangement to be ensured to ensure minimum 1 meter distanceiii. Doors preferably to be in open condition to avoid contactiv. All common touch points to be regularly disinfected.	
6	<p><u>Mandatory Face Masks for Everyone at All Times</u></p> <p>a. Face masks, and other necessary PPEs to be provided to all workers as per guidelines of Govt/ statutory authorities</p> <p>b. Those responsible for sanitation and cleaning of areas to be given coveralls</p> <p>c. The Govt of India advisory available at following link gives details on how to prepare, use and clean such masks.</p> <p>https://www.mohfw.gov.in/pdf/Advisory&ManualonuseofHomemadeProtectiveCoverforFace&Mouth.pdf</p> <ul style="list-style-type: none">i. The workmen/staff may use home-made masks/ "gamchha" (गमच्छा) provided they are used effectively and constantly.ii. All site personnel to wear masks as specified at all times except possibly while having lunch/ tea. During that period, a distance of minimum 2 meters to be maintained between two persons.iii. Minimum two masks to be ensured for each person – one can be used and other washed. Daily washing with detergent is mandatoryiv. Strict directions for usage, washing of mask to be given to workers and officials. Masks are not to be touched from outside, and are to be put in soap solution on reaching residential quarters.v. There must not be a sharing of face covers and a face cover must be used by only one individualvi. Regular awareness by way of posters or daily briefing to be provided regarding correct usage, handling, washing, disposal etc of face masks/gamchhas/cloth etc	Concerned Individual/ Supervisor



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 6 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

	<p>d. Types of Masks and Use case scenarios</p> <ul style="list-style-type: none">i. Homemade/ Reusable Face Covers:<ul style="list-style-type: none">1) Such home/ self-made face covers may be preferably used by all personnel. In case they can arrange better masks, same may be allowed.2) In any case, no person to be permitted in site premises without a mask.ii. Triple Layer Surgical Masks<ul style="list-style-type: none">1) These are disposable masks to be given to visitors/ used by workers and officials as per requirement.iii. N95 Masks<ul style="list-style-type: none">1) Medical, security, and other officials, who come into contact with large number of people during the course of the day to be given N95 Masks2) In addition, infected personnel and who are suspected of infection to use specialized masks as indicated by doctor <p>e. Minimum two sets of masks to be ensured with everyone so that one can be used while other is washed</p>	
7	<p>Mask cleaning/ disposal</p> <p>The Govt of India guidelines in above link also give details on how to wash and dispose the masks. Same to be followed.</p> <p>In addition,</p> <ul style="list-style-type: none">a. For re-usable masks, in labor colony, separate area for cleaning masks to be identified, wherein all workers to wash the masks using detergent and waterb. Cleaning of masks and availability of backup to be ensured by officials as well. <p>c. Safe disposal of Masks, Infected clothing, items etc.</p> <ul style="list-style-type: none">i. Each location to have separate bin for collecting used disposable masks and possibly infected items.ii. All these bins to be collected daily and disposed of by trained staff wearing proper PPEs	Concerned Individual, Agency, BHEL
8	<p>Provision of Food & Refreshments</p> <p>a. Workers: Tea for workers may be avoided. In case necessary, strict social distancing to be ensured, besides hand washing. It is preferable to let the labour bring their own cups/glasses or else use of disposable paper based cups to be encouraged</p> <ul style="list-style-type: none">i. Tea cups may be arranged by the server and picked by worker in contactless manner.ii. Food for workers may be served in packets. <p>iii. Preparation: Common food preparation to be carried out under strict hygiene with cooks wearing gloves and masks. A guard specifically to monitor the health of the cooks may be deployed, who can warn the management regarding any possible health issues.</p> <ul style="list-style-type: none">iv. At tea/ food distribution area, social distancing norms to be ensured <p>b. Officials: As far as possible, home cooked food to be preferred. In case not possible, packed food to be delivered at each seat, prepared in hygienic fashion as above</p>	Agency/ BHEL



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 7 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

9	<p><u>General Precautions in Site Areas</u></p> <ul style="list-style-type: none">a. Workers to be instructed to maintain social distancing of minimum 1 m at all time (tool box meeting, tea time lunch time, gate entry time and drinking/service water area)b. Daily Tool Box Meeting to also include awareness about COVID 19 and precautionary measures to prevent spread.c. No other group meeting to be conducted preferably.d. Contractor to keep their working area clean and hygienic. Disinfectant spray/powders to be applied daily at common places (eating place, drinking water area, service water area and transport vehicles)e. All the workers during resting also, to maintain physical distance of at least 1 meter. Subcontractor has to disinfect the rest shelter at regular intervals.f. Subcontractor may keep sanitizer/hand wash in sufficient numbers at all common points.g. All hanging load must be inspected before starting work. A committee can be formed by each contractor to ensure all these pre start up inspections are done and submit the report to BHEL.h. Sanitizer may be kept at stair case entrance, lift entry point etc. Lifts to be avoided to the extent possible, and staircases preferredi. If any worker is found with COVID-19 symptom, he/she has to be sent to quarantine chamber immediately by medical personnel and medical assistance sought. Contractor to maintain extra room to keep person with symptom in quarantine.j. Workers may be advised to keep separate water bottles. Common water bottles/mugs/glasses to be preferably avoided.k. Contact Biometric attendance system is strictly prohibited till such advisory is in place. <p>l. Regular disinfection of all Areas, Equipment and facilities</p> <ul style="list-style-type: none">i. Each agency to prepare the disinfecting plan and act accordingly.ii. A dedicated disinfectant gang to be identified for the task by each agency. The disinfectant gang to be provided full body suits for the task.iii. All areas (including office premises, site areas, chairs, tables, furniture etc.), tools & equipment to preferably be disinfected by dedicated gang every day before resumption of work.iv. Common touch points like handrails, lift buttons, door/window knobs or handles, vehicle door handles, taps, conference room & dining hall tables/chairs, common sofas/chairs, visitor sofa/chairs, files & folders, etc to preferably be disinfected regularly at frequent intervals every day.v. Pool vehicles, to be disinfected after every use. Social distancing to be maintained inside the common pool vehicles as per Govt./ statutory body guidelines. <p>m. Provision of Disinfectant Spraying Machine and Disinfectant Chemical</p> <ul style="list-style-type: none">i. Provision of disinfectant machine may be deployed for faster disinfection of surfaces, premises, offices etc. <p>The indicative composition of disinfectant chemicals is given in Corp HR Circular No. AA:HR:MR 1 (C) dated 20-03-2020</p> <p>n. Disinfecting the operator/driver touch points of Vehicles/cranes, T&Ps etc.</p> <p>Disinfection to also be carried out for all Cranes, Vehicles, Equipment, consoles, T&Ps etc. which come into contact with operating personnel.</p> <p>o. Mandatory Disinfecting of all PPEs, Tools & Items on daily basis</p> <p>All PPEs, Tools & Items to be disinfected mandatorily before use/ issue and also those in stores</p>	Agency/ BHEL
---	--	--------------



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 8 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

<p>p. Posters on COVID-19</p> <p>q. Sufficient Posters on COVID-19 to be ensured across the site in languages understood by most workers. Contractor to display precautionary measures, 'Do's and Don'ts' at prominent places in languages spoken by their workers.</p> <p>r. Provision of Hand-Hygiene at Site</p> <ol style="list-style-type: none"> 1) In order to ensure hand-hygiene at site, wash basins with sufficient flowing water (going to drain after washing – not re-usable) to be installed at various locations. Here flowing water means water flowing from any tap or poured from tanker/sump/tank etc. Dipping hands into water in buckets/tanks/sumps etc for the purpose of washing is strictly prohibited as it is counter-productive. 2) Brief guidelines for hand washing are as below: <ol style="list-style-type: none"> i. Soap to be provided at each wash basin and replenished regularly. ii. Washing with soap for at least 20 seconds is recommended. iii. As a general guideline, for every 100 workers, 1 wash-basin may be provided at site areas. iv. Close queue to be avoided near wash-basins and 1-meter distance to be maintained. Round markers at 1-meter distance can be ensured as guidance <p>s. Penalty</p> <ol style="list-style-type: none"> i. To ensure compliance penalty may be imposed in line with district administration norms or higher for not wearing mask or violating social distancing guidelines. ii. Concerned subcontractor may also be warned of stricter penalties in case of continued negligence 		
10	<p><u>Labor Colony</u></p> <p>Following guidelines for COVID Prevention in labor colony may be followed:</p> <ol style="list-style-type: none"> a. All relevant guidelines in Corporate HSE Circular BHEL:CO: SOP : COVID-19 : 01 to be followed b. HSEOCP No. 61A for Labor Colony. c. Any other guidelines issued by applicable Govt/ Statutory authorities 	Agency/ BHEL
11	<p><u>Provision of Quarantine Chambers</u></p> <ol style="list-style-type: none"> a. In labor colony/ near site, a temporary home quarantine/ isolation chamber may be set up to keep possible infected cases (with cough, cold, fever or other symptoms) until further medical help arrives. Quarantine chamber should be away from labor colony tenements. b. Similar arrangement of quarantine chambers may be set up at Site premises. c. Necessary arrangements for quarantine shall be as per Govt./ statutory body guidelines 	Agency/ BHEL
12	<p><u>Action in case any individual is suspected of COVID infection or showing symptoms</u></p> <p>In case any suspected COVID-19 case is found or an individual is showing symptoms like cough/ cold/ fever etc.:</p> <ol style="list-style-type: none"> a. Immediately alert BHEL HQ & Corporate office, Customer, Local authorities/ district administration, etc b. Arrange to take the individual to the COVID testing or COVID care facility as per advise of local authorities/district administration c. Sanitize and disinfect immediately all the areas where the person would have visited in the Project premises and labour colony etc. 	Agency/ BHEL



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 9 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

	<p>d. Co-operate with the local authorities in identifying and tracing individuals who might have come in close contact with the suspected person. Take immediate action as advised by the local authorities/ district administration, customer, etc including cordoning off or sealing of the area.</p> <p>e. Apprise BHEL offices and customer regularly.</p>	
13	<p><u>Liaison with Specialty Hospitals for COVID-19</u></p> <p>a. Liaison with specialty hospitals for COVID-19 test/treatment facility, for timely care to suspected individuals, and advice.</p> <p>b. Information regarding local authorities dealing with COVID to be maintained</p> <p>c. Addresses of COVID centers for possible scenarios to be maintained</p>	BHEL
14	<p><u>Hazmat Suits and N95 Masks for Medical Personnel</u></p> <p>Medical Personnel at site to be provided hazmat suits besides N95 masks</p>	BHEL
15	<p><u>Training/ Awareness regarding COVID-19</u></p> <p>All site personnel to be given inputs on COVID-19 regularly covering following broad topics: (Workers may be given Pep Talk once a month through Audio-Visual Medium and daily through toolbox talks and officials to be informed in internal meetings as and when they happen.</p> <p>Every meeting to begin with brief discussion on COVID-19 and need to ensure precautions like masks and social distancing).</p> <p>Suggested topics are given below:</p> <p>a. What is COVID-19 & How it spreads through coughing, sneezing and touching mucous membranes like mouth, eyes after touching infected surface</p> <p>b. What are the symptoms of COVID-19, namely coughing accompanied with fever and flu-like symptoms including running nose and sneezing</p> <p>c. The highly infectious spread, Number of infections and fatalities in the world from this disease</p> <p>d. Fatality rate from COVID-19 varies from 1-10% and individuals with preexisting conditions like heart diseases, diabetes, kidney & liver problems, smokers are more vulnerable to have serious effects from Coronavirus infection</p> <p>e. How COVID-19 infected individual can be asymptomatic, but can still infect friends and family members. Infected individual can be immune, but friends and family members can develop serious issues, so it is best to be protected to avoid problems for friends & family and especially elders</p> <p>f. According to studies, Coronavirus can stay on surfaces from few hours to few days, so touching of unknown surfaces to be avoided and hands washed/ sanitized frequently</p> <p>g. There is no cure/ vaccine for this disease so far</p> <p>h. Prevention is the only cure</p> <p>i. Best way to save oneself is to wear mask at all times and not to touch surfaces and protect oneself from infection from respiratory droplets</p>	Agency/ BHEL
16	<p><u>Keeping Updated on COVID-19 in the Area/ Locality</u></p> <p>Site to remain vigilant about any reported COVID-19 cases in the vicinity and take appropriate precautions/actions as advised by the local authorities/district administration</p>	Agency/ BHEL



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 10 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

17	<p><u>Staggered Shifts to Avoid Contact during Commute</u></p> <ol style="list-style-type: none">Staggered deployment of labour/staff to be ensured to prevent accumulation of people in work areas as well as in common transport vehicles. Aim is to ensure distance of minimum 1 meter between two occupantsDrivers to also wear protective masks, preferably N95Proper air circulation and ventilation to be ensured in vehicles	Agency/ BHEL
18	<p><u>Air circulation, filtering and ventilation in Office Premises & Training Halls</u></p> <ol style="list-style-type: none">Air circulation to be ensured in closed areasWell ventilated areas/rooms preferred to air conditioning, to the extent possible	Agency/ BHEL
19	<p><u>Guidelines to handle outside papers (eg. At Weigh bridge area, LR copies, gate passes, documents, etc.)</u></p> <ol style="list-style-type: none">All involved personnel to strictly maintain 1-meter distance and all social distancing and other guidelinesPPES like Face mask and gloves to be necessarily worn by the dealing person.If required, papers to be handled using long forceps, ironed on both sides using hot iron, and then handled (with gloves)The driver/ visitor must always wear mask and maintain distance	Agency/ BHEL
20	<p><u>General/ Other</u></p> <ol style="list-style-type: none">Shift roster should be followed,Mass gathering meetings should not be conducted. Communications/meetings to be preferably through telephone, Mail, WhatsApp, Web-ex, etc. Face to face meetings to be preferably avoided. In case of unavoidable situations, social distancing to be maintained.Canteen to remain closed preferably.Committee may be formed to monitor implementation of COVID-19 prevention steps besides hygiene and fulfillment of essential needs at labor colony.Office common areas may be sanitized daily (door handle, pantry, washrooms, common printers and other common areas)Vehicle seats and door handle to be sanitized daily.Vehicle arrangement to be made so as to maintain social distancing. Extra persons should not travel in the vehicle. As per Corporate HSE circular, not more than 3 personnel to travel in a single site vehicle (6 seater) at a timeAfter lock down period, on resumption of work, all office equipment such as PC, Printers, AC, etc. are to be disinfected and started one by one after checking for any wear & tear due to rodent acts during lockdown.Banning animals from site: As per recent reports, Coronavirus is also spreading to animals. Hence, all animals may preferably be expelled from site.	Agency/ BHEL

Note:

- Other precautions as deemed necessary by concerned sites may be ensured in order to ensure strict precautions to prevent even a single case of Coronavirus Infection
- Responsibilities are only indicative – to be decided at Site Level



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 11 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

Some Useful Links

A. Internet links of Govt and other authoritative sources on COVID-19 and Coronavirus are listed below:

1. MyGov COVID-19-19 Page: <https://www.mygov.in/COVID-19/>
2. Preventive Measures (Advisory) :<https://www.mohfw.gov.in/pdf/PreventivemeasuresDOPT.pdf>
3. Guidelines for Home Quarantine: <https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf>
4. Guidelines for COVID-19 Quarantine Facilities:<https://ncdc.gov.in/WriteReadData/l892s/90542653311584546120.pdf>
5. Posters, Dos, Don'ts on COVID-19:<https://www.mohfw.gov.in/>
6. Miscellaneous guidelines and circulars: <https://www.nhp.gov.in/whatsnew>
7. Advisory for Ensuring Safe Drinking Water : <https://www.mohfw.gov.in/pdf/advisorydrinkingwaterpdf.pdf>

B. World Health Organization:

1. Infection Prevention & Control :<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control>
2. Advice for Public : <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>
3. Points of Entry & Mass Gatherings: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/points-of-entry-and-mass-gatherings>

Coronavirus Self Declaration Form

- 1) Name:
- 2) Age:
- 3) Father's Name:
- 4) Agency:
- 5) Identification Number.....Identification Type.....
- 6) Arriving from:
- 7) Are you arriving from any COVID Hot Spots or Containment Zones? If Yes, please give details:

- 8) Have you come in contact in with relatives/ friends/ people infected, suspected or diagnosed with COVID-19 in last 21 days? If Yes, please provide your relationship with people and your last contact date with them:

- 9) Have you been advised quarantine/ isolation or undergone treatment w.r.t. COVID-19? If Yes, please provide details (date, duration, location, medical report etc.):

- 10) Please state if you have experienced/ are experiencing any of the following symptoms:

Symptom	Yes	No
i) Fever		
ii) Cough		
iii) Shortness of Breath		
iv) Persistent pain in the Chest		

I acknowledge that the information I have given is accurate and complete.

Date:

Place:

Signature:



OPERATIONAL CONTROL PROCEDURE

Doc. No.: HSEOCP: 61

Rev. No.: 01

Rev. Date: 01.06.2020

Page 13 of 13

OCP No. : 61

Resumption of Construction Activities After Lock Down and Prevention of Coronavirus Infection during Site Operations

Site to follow all the general safety precautions as per this OCP.

In addition, relevant records pertaining to actions taken to be prepared and kept.

Records:

Record Title	Record No.	Location	Responsibility	Retention Period

Verification, Corrective and Preventive Action:

HOD / Site In-charge shall ensure effective implementation of the above procedure. In case of any deviation, shall take suitable corrective and preventive action.

Revision History

Revision Date	Revision No.	Old Text	New Text	Reason	Revised by
18/04/2020	00	-	-	First Issue	As indicated on Page 1
01/06/2020	01	-	<p>Besides general improvements/ corrections, modifications as below:</p> <p>Added (Other clauses shifted by 2):</p> <ul style="list-style-type: none">1. Deployment of COVID Marshalls2. Directions for newly Joining Workers/ Officials; Addition of Format F1 <p>Edited:</p> <ul style="list-style-type: none">4. Construction material, unless sanitized to be kept undisturbed for 3 days6. Sanitization staff to be given coveralls10. Reference to OCP 61A for COVID Prevention in labor colony added	New Govt. guidelines/ general improvements	PSHQ-HSE

Ref : BHEL:CO: SOP : Covid-19 : 01 Dated 07.04.2020

Standard Operating Procedure for Work Resumption after Lock down

Effective Date : 15.04.2020

1.0 Purpose:	The purpose of this Standard Operating Procedure (SOP) is to describe the procedure to follow for resuming work after lockdown due to COVID-19 outbreak.
2.0 Introduction:	This SOP is prepared to resume the work at all Units/ Regions/ Divisions/ Offices of BHEL after the lockdown period due to COVID-19 outbreak. By following this SOP the chain of Corona spread should be eliminated and works can be done safely. All precautionary measures are to be ensured at BHEL establishments so that employees/ contract workers feel safe and secure at work place.
3.0 Scope:	This SOP applies to all BHEL establishments <ul style="list-style-type: none"> - Corporate Office - Manufacturing units - Project sites - Region Headquarters - Divisions - Laboratories - Any other premises
4.0 Coverage:	This SOP covers all stakeholders working at BHEL Premises <ul style="list-style-type: none"> - All BHEL Employees - All Contract employees - All Trainees - Visitors to BHEL premises

5.0 Preparedness prior to resumption

5.1 Area Disinfection :

5.1.1 All areas in the premises including the following should be disinfected completely using user friendly disinfectant mediums.

- a. Entrance Gate of Building, Office etc.
- b. Meeting room, Conference halls
- c. Canteen / Pantry / Dining hall
- d. Open areas available
- e. Verandah
- f. Entrance Gate of Site, Bunkers, Pota Cabins, Building etc.
- g. Equipment
- h. Washroom, Toilet, Sink etc.
- i. Walls
- j. All other surfaces

5.1.2 Procedure is to be established for the disinfection method, type of medium, periodicity, log register, etc.

5.1.3 Appropriate PPE like Face covers, Masks, Goggles, Gloves, Coats/ Aprons, Shoes and also appropriate disinfecting gadgets like sprayer, brush, etc as applicable are to be made available.

5.1.4 Display board regarding the procedure of disinfection is to be displayed at entrances / prominent places.

5.1.5 Installation of Disinfection chambers - Disinfection chambers are to be placed at all entry points for disinfecting the employees / others.

5.2 **Official working procedure**

Changes in the working methodology should be made to avoid crowding and maintaining social distance while working.

5.2.1 Working days - This can be decided by the concerned units/ site/ divisions based on the work load.

5.2.2 Working Hours - The employees are to be detailed in staggered shifts so as to avoid crowding in a particular workplace/ office/ site as applicable.

5.2.3 Work from Home - Work from home is to be implemented in all feasible areas/ functions / offices. Alternatively, rotation roaster can be followed on alternate/ weekly basis for the employees in the same area.

5.2.4 Flexible work hours - Flexible hours staggered at both at office and at home can be introduced depending upon the situation / work demand.

5.3 Instructions/ Advice to all employees/ others- Following advisory is to be communicated to all concerned for strict adherence by them.

- 5.3.1 As far as possible, usage of bulk public transport is to be avoided.
- 5.3.2 All to use their own vehicle for commuting office as far as possible.
- 5.3.3 In case of cab travel, number of persons is to be restricted so as to maintain the social distance.

6.0 On resumption of work

6.1 Security procedures at entry gates

- 6.1.1 Screening of all persons irrespective of cadre / status entering through gate with Thermal scanner.
- 6.1.2 Stoppage of any person found fever and cough with breathing problem and inform concerned department / contractors. Person should be taken to nearest quarantine facility and later to govt hospital immediately.
- 6.1.3 No new workers (without valid pass) should be allowed inside. Fresh induction of workers is to be stopped.
- 6.1.4 Any new vehicle should not be allowed without valid permission.
- 6.1.5 Any parcel / courier person should be stopped at gate. Parcel should be collected from gate by concerned person.
- 6.1.6 All vehicles including two wheelers should be parked outside gate.
- 6.1.7 All the person entering into gate should be permitted inside only if they are with nose mask.

6.2 Sanitization during entry-

- 6.2.1 All people who are entering the premises should be sanitized using whole body sanitizers.
- 6.2.2 Hand sanitizers should be kept ready in the entrances and people after entry should sanitize their hands before proceeding to their work spots.
- 6.2.3 Any parcel / tapals received at gate should be taken inside after disinfection only.

6.3 Attendance system

6.3.1 Bio-metric (Finger touch) swiping for attendance should be temporarily discontinued.

6.3.2 Alternate arrangements for attendance (Swiping with bar code or register) be made.

6.4 During duty hours at Offices/ Plants/ project sites

6.4.1 Employees should preferably work from their seats and avoid going to other's seats.

6.4.2 To maximum possible discussions / interaction can be held through **landline** phones and mobile phones.

6.4.3 Meetings are to be avoided as far as possible and VC/ Conf calls/ other modes can be used in place.

6.4.4 All employees to strictly adhere to the minimum social distance requirement.

6.4.5 To avoid hard copy files where ever possible and soft copy correspondences/ approvals are to be increased by mails or E office.

6.4.6 Approving officials can seek required back up/ supporting documents in soft for study before according approval on hard copy to avoid contaminations.

6.5 During duty hours at project sites - In addition to the above, following Points should be adhered to by all contract personnel

6.5.1 Workers should be instructed to maintain minimum social distancing at all times.

6.5.2 Daily Tool Box Meeting should contain the awareness about COVID 19 and preventive measures to prevent spread.

6.5.3 To avoid or reduce group meetings as far as possible.

6.5.4 Contractor should keep their working area clean and hygiene.

6.5.5 Contractors should apply disinfectant spray/ powders regularly at common places like eating place, drinking water area, service water area, transport vehicles, etc.

6.5.6 Contractor should keep sanitizer/ hand wash soap solutions in sufficient quantity at all common points.

6.5.7 Contractor should display precautions measures do's and don't at prominent places in the languages spoken by the workers.

6.5.8 All workers should be instructed to keep separate water bottles and avoid common water Bottle / mug / glass.

6.6 Sanitization and Upkeep of common places/ utilities

6.6.1 To keep all doors / windows in open condition always during office hours.

6.6.2 As far as possible, air-conditioning should be avoided and natural ventilation should be used.

6.6.3 To ensure that disinfection of all areas are done before start or after end of duty hours.

6.6.4 Wash rooms/ Toilets are to be cleaned, mopped, disinfected and maintained in dry on regular basis.

6.6.5 Walls/ Doors/ Windows and all fittings should also be disinfected and cleaned thoroughly.

6.6.6 Soap solutions & hand sanitizers should be provided and replenished periodically.

6.6.7 To ensure all e - items such as PC, Printer, Electrical cables are not damaged (due to rodents).

6.6.8 All equipment, plant, utilities and vehicles are to be cleaned before putting into operation.

6.7 Common access places

6.7.1 Lifts should be cleaned and sanitized frequently.

6.7.2 To ensure that Lifts are not crowded and ensure social distancing inside lift.

6.7.2 Hand sanitizers should be kept in the lifts or in the lift lobbies.

6.7.3 To see that office vehicles are not crowded so as to ensure social distancing.

6.7.4 Cooking and serving of food, tea / coffee & snacks should be avoided.

6.7.5 Avoid gathering of people in veranda, balcony, parking and other common places.

7.0 BHEL Townships

7.1 Responsibilities of residents

7.1.1 Employees / Residents including their family members should avoid unnecessary movements outside and adopt stay at home concept.

- 7.1.2 Use nose mask when ever going outside home
- 7.1.3 Restrict the children inside the home itself,
- 7.1.4 Try to avoid entertaining guests/ vendors/ others visiting homes.
- 7.1.5 Try to manage household works by family and avoid engaging maids/ outsiders.

7.2 Restriction on the entry of outsiders

- 7.2.1 Entry of suppliers like Amazon, Flipkart, Big Basket, etc are to be avoided and collection is to be done at township main gate or designated collection points.
- 7.2.2 Entry of relatives/ friends of employees is to be avoided to maximum extent. In case of essential entry, they are to be checked for health issue at the gates.
- 7.2.3 Entry of visitors to Guest house also is to be avoided to maximum extent. In case of essential entry, they are to be checked for health issue at the entry.

7.3 Code of Conduct at common places

- 7.3.1 All vendors/ shop keepers must wear all protective gears like Mask, Gloves, Cover all , etc .
- 7.3.2 Vendors should avoid preferably cash transactions and use e-money modes.
- 7.3.3 Wearing of masks, Social distancing and queue system should be strictly adhered by all while gathering at the following places
 - a) Shops
 - b) Post offices
 - c) Banks
 - d) Govt / Pvt offices
 - e) Religious places
 - f) Other all common places

7.4 Sanitization and Upkeep of common places/ utilities

- 7.4.1 All roads, outside quarters, play grounds, parks, shopping centres, utility areas, drainages, waste bins, etc are cleaned and sanitized on regular basis.
- 7.4.2 To ensure that all doors / windows/ fittings of common places are sanitized frequently.
- 7.4.3 As far as possible, air-conditioning should be avoided and natural ventilation should be used in common utility buildings.

- 7.4.4 Special attention be given to wash rooms / toilets by periodical cleaning, swabbing, disinfecting and maintaining dry.
- 7.4.5 Walls/ Doors/ Windows and all fittings in wash rooms should also be disinfected and cleaned thoroughly.
- 7.4.6 Soap solutions/ hand sanitizers/ paper towels should be placed in all public places where ever required and replenished periodically.

8.0 Labour colonies of project sites

- 8.1 All areas outside quarters, utility areas, drainages, waste bins, etc are to be cleaned and sanitized on daily basis.
- 8.2 To ensure that all doors/ windows/ fittings are sanitized frequently.
- 8.3 Wash rooms/ Toilets are to be cleaned, mopped, disinfected and maintained in dry on regular basis.
- 8.4 Walls/ Doors/ Windows and all fittings in wash rooms should also be disinfected and cleaned thoroughly.
- 8.5 Soap solutions/ hand sanitizers should be placed in all quarters/ wash rooms places where ever required and replenished periodically.
- 8.6 To ensure that all the workers who are coming for work are healthy and not having any symptoms of COVID-19 (Fever, Dry cough, Breathing problem).
- 8.7 Arrangements to be made to supply all essential items like rice, wheat, groceries, water, etc to colony itself so as to restrict movements of labourers.
- 8.8 Appropriate masks should be distributed to all labourers.
- 8.9 All should be advised to wear mask always while at colony, movement outside and during duty timings.
- 8.10 Tie up should be made for getting medically examination of all people for any Covid-19 symptoms.
- 8.11 Quarantine hall or room should be established in labour colony for the said purpose.
- 8.12 Contractor should display precautions measures - do's and don'ts at colony premises in all languages spoken by the workers.
- 8.13 Vehicle should be kept ready or tip up for vehicle should be made for emergency purpose. .
- 8.14 Minimum social distancing should be ensured in keeping occupants in a single room.
- 8.15 Disinfecting spray done at all the areas of colony after workers are left for work daily.
- 8.16 A team comprising BHEL HR, BHEL HSE and Contractor site in charge should visit labour colony daily to ensure availability of essential things and regarding no off occupants, cleanliness, sanitization status, etc. and submit a report to head of site.
- 8.17 Feed back in written form or though personal interaction regarding labour colony requirements should be obtained from contract labours on weekly basis.

9.0 Personal Protective Equipment

9.1 Employees/ Contract workers/ Trainees/ Others

9.1.1 All Employees / Contract workers / Trainees / Others whom so ever entering the BHEL premises should be permitted only if wear masks.

9.2 Sanitation staff

9.2.1 All those involved in floor area, garden area, site, offices & all other areas cleaning and sanitation activities should be made use Face covers, Mask, Goggles, Full body covers, Gloves, Shoes etc.

9.2.2 Staggered shift system should be made to these personnel to minimize the exposure to sanitation hazards.

9.3 Medical staff

9.3.1 All medical staff including Doctors, Nurses, Medical attendants, Sanitation staff should be advised to wear all necessary PPE like following as applicable

- Goggles,
- Face shield,
- Mask,
- Gloves,
- Coverall/ gowns (with or without aprons),
- Head cover and
- Shoe covers

10.0 Detailed procedure for site - Operational Control procedure : HSE OCP-61 on Resumption of work after lock down and Prevention of Coronavirus Infection During Site Operations work is enclosed

11.0 General instruction for information purpose

11.1 Instructions regarding types, use and disposal of masks is given in the Annexure -1

11.2 Instructions regarding other types of PPE is given in the Annexure -2

11.3 Personal Protection equipment (PPE) specifications are given in Annexure -3

Annexure -1 : Masks

Respiratory viruses that includes Coronaviruses target mainly the upper and lower respiratory tracts. Hence protecting the airway from the particulate matter generated by droplets / aerosols prevents human infection. Contamination of mucous membranes of the mouth and nose by infective droplets or through a contaminated hand also allows the virus to enter the host. Hence the droplet precautions/ airborne precautions using masks are crucial while dealing with a suspect or confirmed case of COVID-19/ performing aerosol generating procedures.

Masks are of different types. The type of mask to be used is related to particular risk profile of the category of personnel and his/ her work. Following types of masks are recommended for use.

1. Triple layer medical mask
2. N-95 Mak
3. Reusable Cotton / Fabric mask with or without filter

Triple layer medical mask

A triple layer medical mask is a disposable mask, fluid-resistant, provide protection to the wearer from droplets of infectious material emitted during coughing/ sneezing/ talking.

N-95 Respirator mask

An N-95 respirator mask is a respiratory protective device with high filtration efficiency to airborne particles. To provide the requisite air seal to the wearer, such masks are designed to achieve a very close facial fit.

Such mask should have high fluid resistance, good breathability (preferably with an expiratory valve), clearly identifiable internal and external faces, duckbill/ cup-shaped structured design that does not collapse against the mouth.

Reusable Cotton / Fabric mask with or without filter

These masks can either be purchased or home made. Procedure for making these masks at home are given by the Office of the Principal Scientific Advisor to the Government of India_ March 30, 2020.

If correctly worn, the filtration capacity of these masks exceeds those of triple layer medical masks. Since these provide a much tighter air seal than triple layer medical

masks, they are designed to protect the wearer from inhaling airborne particles.

Masks are effective only when used in combination with frequent hand-cleaning with alcohol-based hand rub or soap and water.

Usage guidelines :

- Unfold the pleats of the mask; make sure that they are facing down.
- Place the mask over your nose, mouth and chin. Ensure there are no gaps on either side of the mask. Adjust to fit using nose clip if provided.
- Avoid touching the mask while using it.
- Do not leave the mask hanging from the neck.
- Change the mask every six hours or as soon as they become wet.
- Never reuse disposable masks and dispose the used ones into closed bins after disinfecting them.
- Do not touch the potentially contaminated outer surface of the mask while removing it.
- After removing the mask, clean your hands with soap and water or use alcohol-based hand rub disinfectant.

Disposal of mask:

1. Disinfect the mask in bleaching powder (5%) **OR** 1% Sodium Phosphoryl chloride (POCL₃)
2. After disinfection burn the mask or bury it in the ground.

Annexure -2 : PPE other than Masks

Components of PPE are goggles, face-shield, mask, gloves, coverall/ gowns (with or without aprons), head cover and shoe cover. Each component and rationale for its use is given in the following paragraphs:

Face shield and goggles

Inadvertently touching the eyes/ nose/ mouth with a contaminated hand can be a likely scenario. Hence protection of the mucous membranes of the eyes/ nose/ mouth by using face shields/ goggles is an integral part of standard and contact precautions.

The flexible frame of goggles should provide good seal with the skin of the face, covering the eyes and the surrounding areas and even accommodating for prescription glasses.

Gloves

When a person touches an object/ surface contaminated by COVID-19 infected person, and then touches his own eyes, nose, or mouth, he may get exposed to the virus. Although this is not thought to be a predominant mode of transmission, care should be exercised while handling objects/ surface potentially contaminated.

Nitrile gloves are preferred over latex gloves because they resist chemicals, including certain disinfectants such as chlorine. There is a high rate of allergies to latex and contact allergic dermatitis among health workers. However, if nitrile gloves are not available, latex gloves can be used. Non- powdered gloves are preferred to powdered gloves.

Coverall / Gowns

Coverall/ gowns are designed to protect torso of healthcare providers from exposure to virus. Although coveralls typically provide 360-degree protection because they are designed to cover the whole body, including back and lower legs and sometimes head and feet as well, the design of medical/ isolation gowns do not provide continuous whole-body protection (e.g., possible openings in the back, coverage to the mid-calf only).

By using appropriate protective clothing, it is possible to create a barrier to eliminate or reduce contact and droplet exposure, both known to transmit COVID-19, thus protecting healthcare workers working in close proximity (within 1 meter) of suspect/ confirmed COVID-19 cases or their secretions.

Coveralls and gowns are deemed equally acceptable as there is a lack of comparative evidence to show whether one is more effective than the other in reducing transmission to health workers. Gowns are considerably easier to put on and for removal. An apron

can also be worn over the gown for the entire time the health worker is in the treatment area. Coveralls/ gowns have stringent standards that extend from preventing exposure to biologically contaminated solid particles to protecting from chemical hazards.

Shoe covers

Shoe covers should be made up of impermeable fabric to be used over shoes to facilitate personal protection and decontamination.

Head covers

Coveralls usually cover the head. Those using gowns, should use a head cover that covers the head and neck while providing clinical care for patients. Hair and hair extensions should fit inside the head cover.

Annexure -3 : Personal Protection equipment (PPE) -Specifications

1. PPE Kit

Gloves

- Nitrile
- Non-sterile
- Powder free

- Outer gloves preferably reach mid-forearm (minimum 280 mm total length)
- Different sizes (6.5 & 7)
- Quality compliant with the below standards, or equivalent:
 - a. EU standard directive 93/ 42/ EEC Class I, EN 455
 - b. EU standard directive 89/ 686/ EEC Category III, EN 374
 - c. ANSI/ SEA 105-2011
 - d. ASTM D6319-10

Coverall (medium and large)*

- Impermeable to blood and body fluids
- Single use
- Avoid culturally unacceptable colors e.g. black
- Light colors are preferable to better detect possible contamination
- Thumb/ fingerloopsto anchor sleeves in place
- Quality compliant with following standard
 - a. Meets or exceeds ISO 16603 class 3 exposure pressure, or equivalent

Goggles

- With transparent glasses, zero power, well fitting, covered from all sides with elastic band/ or adjustable holder.
- Good seal with the skin of the face
- Flexible frame to easily fit all face contours without too much pressure
- Covers the eyes and the surrounding areas and accommodates for prescription glasses
- Fog and scratch resistant
- Adjustable band to secure firmly so as not to become loose during clinical activity
- Indirect venting to reduce fogging

- May be re-usable (provided appropriate arrangements for decontamination are in place) or disposable
- Quality compliant with the below standards, or equivalent:
 - a. EU standard directive 86/ 686/ EEC, EN 166/ 2002
 - b. ANSI/ SEA Z87.1-2010

N-95 Masks

- Shape that will not collapse easily
- High filtration efficiency
- Good breathability, with expiratory valve
- Quality compliant with standards for medical N95 respirator:
 - a. NIOSH N95, EN 149 FFP2, or equivalent
- Fluid resistance: minimum 80 mmHg pressure based on ASTM F1862, ISO 22609, or equivalent
- Quality compliant with standards for particulate respirator that can be worn with full face shield

Shoe Covers

- Made up of the same fabric as of coverall
- Should cover the entire shoe and reach above ankles

Face Shield

- Made of clear plastic and provides good visibility to both the wearer and the patient
- Adjustable band to attach firmly around the head and fit snuggly against the forehead
- Fog resistant (preferable)
- Completely covers the sides and length of the face
- May be re-usable (made of material which can be cleaned and disinfected) or disposable
- Quality compliant with the below standards, or equivalent:
 - a. EU standard directive 86/ 686/ EEC, EN 166/ 2002
 - b. ANSI/ SEA Z87.1-2010

Triple Layer Medical Mask

- Three layered medical mask of non-woven material with nose piece, having filter efficiency of 99% for 3 micron particle size.
 - a. ISI specifications or equivalent

Gloves

- Nitrile

- Non-sterile
- Powderfree
- Outer gloves preferably reach mid-forearm (minimum 280mm total length)
- Different sizes (6.5 & 7)
- Quality compliant with the below standards, or equivalent:
 1. EU standard directive 93/ 42/ EEC Class I, EN 455
 2. EU standard directive 89/ 686/ EEC Category III, EN 374
 3. ANSI/ SEA 105-2011
 4. ASTM D6319-10

Body Bags- Specifications

- 1) Impermeable
- 2) Leak proof
- 3) Air sealed
- 4) Double sealed
- 5) Disposable
- 6) Opaque
- 7) White
- 8) U shape with Zip
- 9) 4/ 6 grips
- 10) Size: 2.2 x 1.2 Mts
- 11) Standards:
 - a) ISO 16602:2007
 - b) ISO 16603:2004
 - c) ISO 16604:2004
 - d) ISO/ DIS 22611:2003

All items to be supplied need to be accompanied with certificate of analysis from national/ international organizations/ labs indicating conformity to standards

All items: Expiry 5 years

* Due to scarcity of coveralls, and risk versus benefit, that as an emergency temporary measure in larger public interest, in present given circumstances, the fabric that cleared/passed 'Synthetic Blood Penetration Resistance Test' (ISO 16603) and the garment that passed 'Resistance to penetration by biologically contaminated solid particles (ISO 22612:2005) may be considered as the benchmark specification to manufacture Coveralls." The Coveralls should be taped at the seams to prevent fluid/droplets/aerosol entry.

The test for these two standards (ISO 16603 and ISO 22612:2005), which can be performed in Indian laboratories are as per WHO Disease Commodity Package (Version 4.0)