Eskom	Duvha power station	

Title:	**UNIT 2 FFP REBAGGING PROJECT**	Unit no.	2
		Area of Applicability:	**HMD,PROJECTS,BOILER ENGINEERING**
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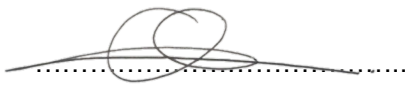		
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System Engineer	Boiler engineering manager	Project manager
Date: 08/10/2020……	Date: 09 October 2020	Date: 09 October 2020

1. CONTRACTOR COMPETENCY REQUIREMENTS (TECHNICAL GATE KEEPERS);

1.1 Must provide work methodology to execute the scope of work.

1.2 Must have at least two Responsible Persons (RP) authorised to work on the FFP with valid Duvha PSR authorisation

1.3 Must have at least two supervisors with filter bag replacement and removal experience or similar work experience (provide proof of work done)

1.4 Must have at least two health and safety officers with SAMTRAC qualifications or similar certificate.

1.5 Must be familiar with the following OSH Act 85 of 1993 requirements;

- Health and Safety Representatives - Act 17(4),(5),(6) ,
- Environmental Regulations for Workplaces- Regulations 6(1) to (3),
- General Safety Regulations – Regulations 2 and 5(1).

1.6 Must be familiar with disposal of old filter bags according to Eskom's Waste management Procedure ENVP005 (Latest revision must be used)

1.7 The contractor to provide proper Personal Protective Equipment relevant to the project and accordance to Duvha safety standard and Regulations

1.8 The contractor submits his method statement on the cleaning within two weeks of the Contract Date to the Project Manager for acceptance.

2. DESCRIPTION OF THE WORK-HIGH LEVEL SCOPE OF WORK

2.1 The removal of the complete set of used fabric filter bags (27000) from the Fabric Filter Plant of Unit 2 on cells A, B, C and D.

2.2 The disposal of the old used bags, which is classified as class 1 hazardous waste, to an approved disposal site.

2.3 The disposal of the old used bag cages to an approved disposal site

2.4 The recovery of all the bottom steel caps and the top support rings to a predetermined storage area.

2.5 The installation of 27000 new PPS/P84 filter bags and new 27000 complete bag cages (2 parts)

2.6 The pre-coating of each cell with 16 tons of hydrated lime as per the ESKOM pre-coating procedure

3. WORK TO BE PERFORMED BY THE CONTRACTOR FOR THE WORK

The work is for the replacement of a complete set of used filter bags (27000) with a new free issue set of filter bags (27 000 new PPS/P84 filter bags) and new free issue filter bag cages on the Fabric Filter Plant unit 2 on cell A, B, C and D.

- The bag replacement of Unit 2 is either conducted On Load or off load.
- During On load Bag replacement, the bags are replaced one cell at a time.

- Each cell has a different possession date. Possession date will be as per Task Order,
- The Contractor completes the cell bag replacement within five days Thus all the internal work on the cell is completed within 5 days'
- The Contractor completes each cell's time pre-coating within one day of completing the bag replacement, and lime coating shall be done on Sunday of the week ending, preferably,
- During the on-load re-bag, only the cell where the bags are being replaced is isolated the rest of the plant is treated as live Care is taken to avoid disturbing any equipment and devices on the running plant as this might cause damage to the plant or people. Special care is taken to avoid **TEMPERING** with the damper actuators of adjacent cell, as these might operate abruptly and **CAUSE A UNIT TRIP**.
- During off-Load Bag replacement, all the bags are replaced (all four cells).
- All the cells have the same possession date,
- The Contractor completes all four cell's bag replacement within nineteen days. Thus all the internal work is completed within 20 days,
- The Contractor completes all four cell's lime pre-coating within one day of completing the bag replacement,
- The Contractor to return all unused items or items that can be refurbished to stores through the Project Manager.

3.1 REMOVAL OF OLD SUPPORT CAGES AND FILTER BAGS

- The Employer provides isolation and issues a permit to commence work at 08h00 on the morning of the possession date,
- The *Contractor* removes the pulse pipes from their installed position in the plant, labels it and stores it in a safe place for re-fitting it in original position after the bag replacement,
- The *Contractor* doesn't damage the mounting pins if any damage occurs, the *Contractor* notifies it as a defect and repairs the damage,
- The Contractor seals the pulse pipes open ends to limit dirt ingress during storage period. The procedure to be used for the sealing is submitted within two weeks of the Contract Date to the Project Manager for acceptance. The Contractor removes all the used blanking plates and delivers it to the FFP stores,
- The Contractor removes the old bags from their installed position in the plant, by lifting the first four meters of the cage and the bag out,
- The bag is 8 meters long and the cage is in two 4-meters sections,
- The Contractor cuts off the bag form the top cage, splits the top cage form the bottom cage, pulls out the bottom half and carefully removes the bag from the bottom cage,
- The bags are immediately packed in an industrial strength waste bag,
- The Contractor removes and stores the bag steel cups and top support rings in a safe place for later re-use during installation of new cages and bags,
- The Contractor does not cause damage to the steel rings on which the bags cages are supported. If any damage occurs the contractor notifies it as a defect and repairs the damage,

- The contractor retain all cages, steel cups and support rings for further use. Any damage is reported immediately to the Supervisor,
- Steel cups are retained at ground floor level There is no retention space inside or outside of the cell area,
- The Contractor disposes the old bags through the clean-air side via the bag disposal chute into the dirty bins on ground level Each cell has four chutes,
- After all bags have been removed the cell is vacuum cleaned properly with industrial vacuum cleaning equipment,
- The Contractor in conjunction with the Supervisor inspects the cleaned cell for holes or indication of dust leaks before re-bagging commences and report to the System Engineer.

3.2 DISPOSAL OF OLD BAGS AND OTHER REFUSE

- All removed bags are packed in industrial strength waste bags upon removal from the cages,
- The Contractor provides disposal bins for the storage and transport of the used fabric filter bags and other material to be disposed of.
- The contractor makes use of an experienced waste disposal company such as Roshcon, Waste Tech or other similar accepted by the project manager for the correct storage, transportation and disposal of the old bags,
- The Contractor makes use of the disposal chutes installed at the rear of the FFP between the top walkway and the ground level to convey the bags from the top of the FFP to the disposal bins at the bottom,
- No objects are dropped from the top of the FFP except via these disposal chutes,
- The contractor employs methods (e.g. covering the waste bins or employing water sprays) to keep dust pollution into the nearby environment to the minimum during the bag replacement process. The Contractor submits their method statement within two weeks for the Contract issue Date to the Project Manage r for acceptance,
- The bags are disposed in a manner that causes that no bags are lost during the transportation process form Site to the class 1 disposable site nor cause any pollution of the environment in the process,
- The Contractor regularly removes the filled disposal containers form Site to the class 1 disposal site No containers will be over filled or left uncovered,
- The Contractor provides the Project Manager with a disposal certificated as proof of compliance that the bags were disposed of at a class 1 disposable site, This is submitted within two weeks of completion,
- The Contractor removes all used cages and disposes them to the correct bins as provided by the Employer,
- The fabric filter area must be barricaded off with solid barricading during the re-bag process,
- The Contractor notifies the Supervisor to inspect the cell before re-bagging commence,
- The Contractor collects the bags from the Duvha Fabric Filter Plant bag store as indicated by the Project Manager.

3.3 THE INSTALLATION OF NEW FILTER BAGS

When the removal of the old bags ad cages has been completed and the cell is cleaned, the installation of new bags and cages follows in a sequential detailed below,

- The Contractors inspects the new bags prior the installation, Any damage to the bags is reported to the Supervisor. The Contractor does not install a damaged bag,
- Install the new bag and insure that the cuff is installed properly in to the bag plate as indicated on the drawings 0 57/48834, 0.57/42302 and 0 57/42303,
- Install the cage steel support ring over the bag cuff,
- The steel cups are the installed followed by the bottom cage, then the top cage Ensure that the two cages are joined properly and locked in position,
- The Contractor fits the new bags on to the cages and installs it together the used steel cups and top support rings into its position in the casing. The contractor cleans the pulse pipes before refitting it to their original position in the plant,
- Once one row of bags is installed the pulse pipes is placed into position, ensuring the mounting pins are secure properly and the correct pins is fitted on the correct row,
- The Contractor cleans all debris form the cell and associated dust hoppers,
- The Contractor notifies the Supervisor to inspect the cell and the newly installed fitted bags before signing off the permit to work inside the cell,
- Once the gas permit has been cleared, the Contractor pre-coats the new filter bags with hydrated lime in terms of the ESKOM pre-coating procedure under the supervision of the Supervisor,
- The contractor supplies, deliver and unloads the lime to lime coating plant,
- The Contractor coats each completed cell with 16 tons of hydrated lime as per the ESKOM pre coating procedure, after the re-bag is completed. Note that only lime supplied in a tanker is acceptable.
- During the On Load Bag replacement each cell is coated with lime as soon as the re-bag for that cell has been completed and before the following cell is taken out of service,
- During the Off Loading Bag Replacement the cells are coated with lime after all four cell's bags have been replaced, This is done as per the Eskom pre-coating procedure, which is different form the on-load procedure,
- The Contractor provides the lime and labour for this pre-coating activity,
- On completion of each cell's bag replacement the ground floor area is washed and left in a clean state.