

# **Standard Guidelines for Worker's Accommodation at BHEL-Project Sites.**

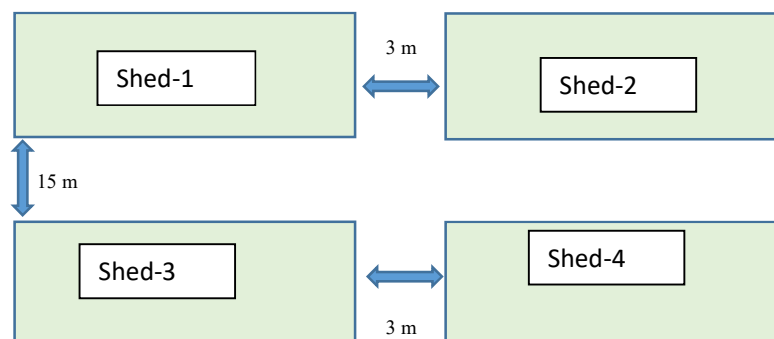
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### Standard Guidelines for Worker's Accommodation / Establishments at BHEL-Project Sites.

#### 1) Key Parameters for Construction of Workers' Accommodation / Establishments at Project Sites: -

To ensure the well-being, safety, and comfort of all construction workers, the following parameters shall be adhered to during the development of labour accommodations and associated facilities:

- a) **Land Arrangement:** - The contractor shall arrange suitable land for the labour colony at their own cost, preferably within five kilometres of the project site. The land must be properly levelled and dressed by the contractor. All arrangements for electricity and drinking or service water shall also be made by the contractor within their quoted price. However, BHEL may provide land on a sharing basis for worker establishments if such land is made available to BHEL by the project owner.
- b) **Utilities – Water and Electricity:** - The contractor shall make suitable arrangements for the water network and electricity for all worker establishments. Installation of total electrical layout including transformers (if required), proper electrical wiring and fittings shall be provided to ensure safety and reliability.
- c) **Welfare, Health, and Sanitation Facilities:** - The agency shall provide and maintain facilities for safety, welfare, drinking water, sanitation, hygiene, and biennial health check-ups for all construction workers. These facilities must be available both at workplaces and within the labour and staff colonies.
- d) **Layout and Approval:** - All worker accommodation sheds, barracks, and hutments shall be constructed as per the layout plan approved by BHEL. The construction of temporary colonies, huts, and toilets must follow the attached drawings and shall only commence after obtaining prior approval from the BHEL site. A general layout plan for accommodating 120 workers, including toilet facilities, has been provided. If the agency needs to deploy a larger or smaller number of workers, the number and size of sheds may be adjusted accordingly in consultation with BHEL. The proposed layout of worker accommodations must be reviewed and approved by BHEL before construction begins. The design and construction of all worker accommodation sheds must be uniform and in line with the stipulated guidelines. This uniformity will ensure an organized and aesthetically pleasing appearance of the labour establishment colony.
- e) **Space and Layout Requirements:** - Each accommodation barrack shall have a minimum clear ceiling height of 3(three) metres. There should be at least 3(three) feet of spacing between beds to maintain hygiene and privacy. Only standard metal beds are permitted; substandard types will not be accepted by BHEL. Each hall should be equipped with wardrobes or shelves with locking arrangements for the secure storage of personal belongings. Each worker must be provided a minimum space of 3.6 square metres. A minimum spacing of three metres must be maintained between two barracks side-by-side and fifteen metres between barracks front-to-front. A typical layout plan of the labour colony, illustrating these requirements, is attached for reference.



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- f) **Facilities for Women Workers: -** Separate and exclusive facilities must be provided for women workers. These shall include separate sheds, bathrooms, and toilets, designed to ensure privacy, safety, and comfort

## **2). Facilities to be Provided at Labour Establishment**

### **a) Toilet, Bathing & Washing: -**

- i). Sufficient numbers of toilets, urinals and bathing room within each barrack/shed with complete water supply system. Minimum 1 nos. urinal cum toilet for every 10 persons and 1 no. bathing room for every 10 persons should be ensured. There should not be any open bathing place in the labour colony to maintain proper hygiene.
- ii). Septic tank/Bio-digester with proper inlet/outlet connection to be provided for each shed of adequate size as per applicable standard codes / specifications to cater the requirement of minimum 120 workers.
- iii). Suitable / proper arrangements for washing clothes & drying washed clothes shall be made.
- iv). Toilet and Bathing Room doors shall be of metal frame with PVC doors (25 thk. double skin) of approved make and as per specification, drawing and instructions of BHEL Engineer In-charge.

### **b) Service & Drinking Water: -**

- i.) Proper storage facilities for both service water & drinking water in the labour colony.
- ii.) Bore wells (wherever feasible) to be provided to draw the ground water with submersible pumps of adequate capacity and associated piping and fittings for filling overhead water tank and for connection with Water Treatment Plant. Borewell should be of adequate capacity to fulfil the water requirement (both drinking and service water) for both 'Worker Accommodation Sheds' and 'Medical Centre' building.
- iii.) In case ground water is the source for both service & drinking purpose, water purification plant/RO system should be installed for both service & drinking water purpose.

### **c) Medical Facilities: -**

- i). One Medical centre (24 x7 working), well finished & furnished, of approx. 150 sqm shall be constructed by the contractor in the labour establishment area for the workmen. Relevant drawing of medical centre & list of equipments is attached.
  - Doctor's room with attached toilet.
  - Nurses Room with attached toilet.
  - Dispensary area.
  - Procedure room/hall (Balance area) with common toilets.
- ii). Deployment of Two (2) MBBS-qualified Doctors and Four (4) trained Male/Female Nurses to ensure round-the-clock (24 x 7) medical services with running medicines.
- iii). Dedicated ambulance in the labour colony for 24x7 hrs emergency medical situation fully equipped with ventilation and life support facilities.
- iv). Periodic medical check-ups and free medicines shall be provided to all workers/labourers at free of cost

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- v). The management of the medical centre like monthly cost distribution, ensuring timely availability of adequate medical staff like doctors, nurses, lab technician shall be responsibility of Project Site Contractor Association and the same shall be monitored by BHEL Site HR along with respective package in charges.
- vi). Recurring expenses like payments for medical staffs such as doctors, nurse, ambulance services, consumables, medical instruments/devices & running medicines cost has to be borne by the availing agencies on sharing basis as decided by BHEL Site. No cost shall be borne by the workers/labours at site.

#### **d) Safety, Cleaning & Hygiene: -**

- i). The regular cleaning and housekeeping of labour establishments, storage water tank, open areas should be ensured by the agencies to maintain proper hygiene. Dedicated persons to be deployed for cleaning of toilets on daily basis.
- ii). Proper ventilation and lighting in both day & night. Proper false ceiling (in extreme hot conditions) & ceiling fans/coolers shall be provided in the barracks.
- iii). Readily accessible adequate first aid boxes, minimum 4 numbers each of fire extinguishers & dust bins shall be provided in each barrack/shed.
- iv). Centralised garbage dumping storage area in the labour colony & its regular clearance should be ensured by the agencies.
- v). Suitable arrangement for regular Pest / ants / Rodent / Rats / Snakes / Mosquito control in the labour colony shall be made with a reputed firm/ organisation by the vendor at their cost. Window mesh for prevention from mosquito shall be ensured.
- vi). Proper surface water drainage system to be followed by the agencies as per BHEL approved layout plan of the labour colony. No water logging should take place in and around labour colony even during peak rainy season.
- vii). Proper security deployment 24x7 for labour establishment by the respective agency along with provision for fencing/boundary wall and gate for labour colony.
- viii). **The contractor shall ensure availability of support personnel** such as an electrician, plumber, and other essential technicians on a **need-based** and **as-required** basis for the labour colony.

#### **e) General Points: -**

- i). Proper approach road to the labour colony & its connectivity with each barrack with necessary hard surfacing preferably with brick flat soling/paver blocks/PCC paving.
- ii). Separate kitchen facilities with dining hall & clean cooking fuel (without smoke) should be used uniformly in labour establishments to avoid health hazards.
- iii). Space for recreation facilities of the workers like playground etc. The maintenance of the recreation facilities should be ensured by the agencies on sharing basis. Also, weekly or fortnightly games/get-together/entertainment to be organised by the vendor for building motivation & team spirit amongst the labour.
- iv). Proper transportation arrangement / conveyance for going to work place from labour colony would have to be ensured by agency. No two-wheelers would be permitted inside plant premises.
- v). Flooring for Worker's accommodation sheds, kitchen shed, washing area and other sheds i.e. pump house for water treatment plant along with RO system

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shall be of cement concrete flooring with metallic hardener. Flooring details shall be as under:

- a) Providing and laying 50 mm thick heavy-duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring.
  - b) Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand: 4 stone aggregates 12.5 mm 20 well graded) and
  - c) top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardener mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete.
- vi). Supply and fixing of metal frame bed for each worker accommodation shed of size min. 6 feet by 3 feet and min. 3-inch thick coir mattress for each bed. Top of bed shall be made of minimum 18 mm thick ply wood board using standard quality commercial plywood. Bed frames shall be strong and durable enough for comfortable and standard use.
- Note: Make & model shall be approved from BHEL Engineer-In-charge before procurement.**
- vii). Supply and fixing of calibrated energy meter (digital) separately for each shed i.e. 1 no. for each shed.

**f) Electrical Guidelines: -**

- i). Illumination Design Requirements
  - Lighting system shall be designed using best engineering practices ensuring **uniform, reliable, glare-free** illumination.
  - Lighting fixtures must be finished to avoid bright spots from direct or reflected light.
  - Diffusers/louvers shall be made of **impact-resistant, non-yellowing polystyrene**.
- ii). Minimum Illumination Levels & Fixture Types

| Location            | Avg. Lux Level                           | Minimum Fixture Requirement                 |
|---------------------|------------------------------------------|---------------------------------------------|
| Inside Sheds        | <b>200 Lux</b>                           | LED Batten/Tube, IP20 or better             |
| Kitchen & Toilets   | <b>200 Lux</b>                           | LED Batten/Tube/Downlighter, IP54 or better |
| Street Lighting     | <b>20 Lux</b>                            | LED street lights, IP55 or better           |
| Peripheral Lighting | <b>10 Lux</b> (min. 10m width from wall) | LED street/flood lights, IP55 or better     |

- iii). Lighting System Components
  - System shall include distribution boards, isolating lighting transformer, lighting panels, fixtures, junction boxes, receptacles, switch boards, poles/masts, conduits, cables and wires.
  - Coverage must include interior sheds, toilets, kitchen, street lighting, and area lighting.
- iv). Outdoor Lighting Control
  - All outdoor lighting must operate through an **automatic synchronous timer**.
  - Bypass provision shall be included in the lighting panel.
- v). LED Performance Requirements
  - Minimum LED chip efficacy: **≥ 120 lm/W**.
  - Minimum luminaire efficacy: **≥ 100 lm/W**.

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- Indoor LED colour temperature:  $\geq 5700\text{K}$  (cool daylight).
- Outdoor LED colour temperature:  $\geq 4000\text{K}$ .
- vi). Ceiling Fans
  - Provide **minimum 1 ceiling fan per 10 sq.m** area.
  - Fans shall be:
    - a) 240V  $\pm 10\%$ , 50 Hz single-phase,
    - b) Class 'E' or better insulated motor,
    - c) 1200 mm sweep, aerodynamically balanced aluminium blades,
    - d) BEE 5-star rated,
    - e) With stepped electronic regulator,
    - f) PF not less than 0.9.
- vii). Electrical Socket Outlets
  - Provide at least **one 6/16A, 240V AC universal socket** per 10 sq.m area.
  - Install sockets at an ergonomically appropriate operating height.
- viii). Street & Peripheral Lighting
  - Design street and peripheral lighting as per applicable engineering guidelines.
  - Peripheral lighting:
    - a) **Minimum 70W LED** fixture at every shed column.
    - b) **Minimum 120W LED** if column spacing exceeds 5 metres.
- ix). Flood Lights / High Mast
  - Provide flood light poles/high mast lighting in recreation areas based on site requirements.
- x). Illumination Testing & Compliance
  - Contractor must **demonstrate and record** average lux levels for all designated areas after installation.
  - Illumination levels must meet specification requirements to the satisfaction of the **Engineer-in-Charge**.

### 3). Compliances of Guidelines: -

The contractor shall maintain the labour colony for its workmen as per BHEL guidelines. 0.25 % of every RA Bill shall be linked on certification from BHEL for compliance with the guidelines of labour colony.

In case labour establishment is not completed as per the layout drawing and compliance with statutory norms/BHEL Guidelines and any penalty is imposed by Customer, same shall be recovered from contractor's RA Bill.

Regular visit of workmen establishment shall be done by team from BHEL to ensure implementation of above guidelines. Any irregularities observed shall have to be rectified by agencies on immediate basis.

In case, the report submitted by BHEL team is not satisfactory, necessary actions including recoveries (0.25% of RA Bill value) shall be done as per contract. In addition to the recoveries as per contract (0.25% of RA Bill value), expenses incurred (if any) for maintenance & rectification by BHEL shall be recovered from agency along with 5% overheads.

In case Owner/Customer specific guidelines & drawings w.r.t worker's establishment are available in any project, the same shall prevail over and above the BHEL guidelines. Also, in case of conflict of guidelines stipulated in BHEL HSE documents, the more stringent guidelines shall prevail.

Any other welfare measures which the Central Government considers, under the set of circumstances, as required for decent life of workers shall be ensured as per following applicable Labour Laws: -

- Contract Labour (Regulation & Operative) Act, 1970,

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- Inter-State Migrant Workmen (Regulation of Employment and Condition of Services) Act, 1979,
- The Building and Other Construction Workers Act, 1996.
- Labour Code on Occupational Safety, Health and Working Conditions issued by Government of India

**Central Procurement Cell (CPC), BHEL-PSHQ**

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## **Guidelines for Maintenance of Facilities at Labour Colony**

### **Formation and Operation of Common Management Association (CMA) for Labour Colony & Medical Centre**

#### **1. Purpose**

A "**Common Management Association (CMA)**" shall be formed to ensure uniform management, maintenance, and monitoring of the Labour Colony and Medical Centres constructed at Project Sites. The CMA shall aim to maintain consistent living, health, and welfare standards for all workers through shared responsibility, coordinated management, and standardized procedures.

#### **2. Scope**

This SOP/Guidelines shall apply to all contractors, subcontractors, and service providers engaged at the project site who are responsible for labour accommodation and welfare facilities, including medical centres and ambulance services.

#### **3. Objectives**

The primary objectives of the CMA are to:

- Establish a common management framework for Labour Colony and Medical Centres constructed at Project Sites.
- Ensure compliance with statutory and contractual welfare, health, and safety standards.
- Promote efficient use of shared resources such as medical staff, ambulances, and infrastructure.
- Standardize inspection, recordkeeping, and reporting practices.
- Facilitate joint welfare, health, and awareness programs for all workmen.

#### **4. Composition of the CMA**

The CMA shall comprise the following members: -

|                                                                 |                         |
|-----------------------------------------------------------------|-------------------------|
| BHEL Project Director                                           | Chairperson             |
| BHEL Site HR                                                    | Secretary               |
| BHEL Package In charge                                          | Executive Member        |
| Welfare/HSE (Health, Safety & Environment) Officer              | Member (HSE)            |
| One Representative from Each Major Contractor                   | Members (Working)       |
| Senior Doctor / Chief Medical Officer                           | Medical Advisor         |
| Nominated Contractor Representative (rotational every 6 months) | Secretary / Coordinator |
| Finance/Accounts Officer                                        | Accounts Officer        |

##### **4.1 Formation of Working Committees**

To ensure effective day-to-day management of the Labour Colony and Medical Centre, the CMA shall form two dedicated **Working Committees** as follows:

##### **A. Cleanliness & Housekeeping In charge**

- **In-Charge:** Nominated by Project Director



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The Cleanliness & Housekeeping In charge shall:

- Conduct weekly inspections and record findings in the **Colony Inspection Register**.
- Identify maintenance issues and coordinate with contractors for timely rectification.
- Verify availability of cleaning materials, consumables, and manpower.
- Recommend improvements in hygiene standards, pest control measures, and sanitation infrastructure.

The In charge is authorized to:

- Issue instructions to all contractors regarding cleanliness and housekeeping improvements.
- Direct immediate corrective actions in case of hygiene deficiencies or unsafe conditions.
- Submit non-compliance reports to CMA Chairperson for necessary action, including penalties as per contract.
- Recommend temporary stoppage of colony facilities if conditions pose a health risk.

#### **B. Medical & Health Services Committee (MHSC)**

- **In-Charge:** BHEL HSE Officer

The Medical & Health Services In charge shall:

- Monitor functioning of the Medical Centre, availability of doctors, nurses, and ambulance staff.
- Ensure adequate medicines, consumables, and life-saving equipment in the Medical Centre.
- Conduct monthly health check-ups, vaccination drives, and awareness programs for workers.
- Review patient registers, incident reports, and emergency response records.
- Verify ambulance logbooks, maintenance, and 24×7 readiness.
- Coordinate with nearby hospitals for referrals and emergency support.
- Identify gaps in medical preparedness and propose enhancements.

The In charge is authorized to:

- Direct medical staff to ensure compliance with CMA standards and statutory requirements.
- Recommend immediate procurement of essential medicines or equipment during shortages.
- Authorize emergency use of ambulance or medical facilities without delay.
- Report non-compliance or negligence by any contractor to the CMA Chairperson.

#### **4.2 Reporting**

- Each committee shall submit a **Weekly Report** to the CMA Secretary.
- Key findings, non-compliance issues, and recommendations shall be reviewed in the monthly CMA meeting.

#### **5. Responsibilities of CMA: -**

##### **5.1 General**

- Ensure smooth operation and upkeep of labour colonies and medical centres.
- Conduct monthly inspections and audits to ensure compliance with approved standards.
- Develop and implement uniform maintenance and welfare procedures.
- Review and address issues related to worker accommodation, sanitation, and healthcare.

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#### **5.2 Labour Colony Management**

- Maintain cleanliness, hygiene, lighting, water supply, power, and sanitation systems.
- Ensure availability of safe drinking water and waste disposal arrangements.
- Oversee canteen, recreational, and welfare facilities.
- Attend to labour grievances promptly and maintain a grievance register.
- Ensure regular cleaning, disinfection, and maintenance of all toilets, bathrooms, and wash areas through a designated housekeeping agency. Proper usage of cleaning chemicals, disinfectants, and daily checklists shall be mandatory.
- Engage a separate specialized agency for landscaping, garden development, greenery improvement, and routine maintenance. The agency shall also support overall colony cleanliness and upkeep of open spaces.

#### **5.3 Medical Centre Management**

- Ensure 24 x 7 availability of doctors, nurses, and ambulance service.
- Procurement & Maintain adequate stock of medicines, consumables, and emergency equipment.
- Conduct regular medical check-ups, vaccination drives, and health awareness programs.
- Maintain patient records, stock registers, and incident reports in prescribed formats.
- Medicines & consumables shall be of high standard/reputed brands.

#### **5.4 Labour Entry, Exit & ID Card Management**

The CMA shall ensure the following procedures for control and security of labour movement at the Labour Colony and Project Site:

##### **5.4.1 ID Card Issuance**

- All workers shall be issued a **unique Labour ID Card** by their respective contractors upon joining.
- The standard format for labour ID cards shall be finalized by the CMA.
- The CMA shall maintain a **centralized Labour ID Register** indicating worker details, contractor name, date of issue, and validity.
- No worker shall be allowed entry into the Labour Colony or Project Site without a valid ID card.

##### **5.4.2 Entry & Exit Control**

- Entry and exit from the Labour Colony shall be controlled through a **security gate**, where ID cards must be shown and verified.
- Security personnel shall maintain a **Daily Attendance/Movement Register** for tracking resident workers.
- Workers returning after leave/holiday must present their ID card for re-validation.

##### **5.4.3 Surrender of ID Cards**

- **Workers proceeding on long leave (above 3 days)** shall surrender their ID cards to their contractor's representative or security in-charge.
- **Workers resigning or completing their work** must compulsorily surrender the ID card before final exit from the project.
- Contractors shall notify the CMA of all labour exits, and the surrendered ID cards shall be recorded and safely retained for audit.

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#### **5.4.4 Misuse Prevention**

- Any lost or damaged ID card must be reported immediately to the contractor and CMA.
- Duplicate ID cards may be issued only after due verification and approval from the CMA Secretary.
- Misuse of ID cards, unauthorized entry, or allowing others to use one's ID shall be treated as a security violation and dealt with as per project rules.

#### **5.4.5 Monthly Review**

- The CMA shall review:
  - Total labour count
  - Issued and surrendered ID cards
  - Discrepancies found during entry/exit audit
- Any mismatch shall be escalated to the Chairperson for necessary action.

### **6. Meetings**

- CMA meetings shall be conducted once every month or more frequently as required.
- Minutes of Meetings (MoM) shall be prepared by the Secretary and circulated within 3 working days.
- The Chairperson shall review the previous month's action points for closure and compliance.

### **7. Reporting**

- CMA shall prepare a Monthly Status Report including:
  - Labour colony occupancy and maintenance condition
  - Medical centre operations and staff attendance
  - Health check-ups, awareness sessions, and medical incidents
  - Issues identified and corrective measures taken
- The report shall be submitted to the BHEL HR Head for review and record.

### **8. Funding and Cost Sharing**

8.1 A **Common Welfare Fund** shall be created to meet expenses related to the operation and maintenance of the labour colonies and medical centres under the CMA.

8.2 All contractors working under the project shall contribute to this fund as follows:

- **Fixed Expenses:**  
Fixed expenses (such as infrastructure maintenance, common staff salaries, utilities, and insurance) shall be distributed among all contractors in proportion to their individual contract value on pro-rata basis.
- **Running Costs:**  
Running or variable expenses (such as medicines, consumables, ambulance fuel, and equipment servicing) shall be shared as per actual usage or consumption, based on monthly records maintained by the CMA.

8.3 The CMA Secretary shall maintain a detailed cost register reflecting both fixed and running cost allocations.

8.4 All expenditures shall be approved by the CMA Chairperson and verified by the Project Management / Accounts team before disbursement.

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8.5 A monthly financial statement shall be circulated to all member contractors for review and reconciliation.

#### **9. Compliance and Audit**

- The CMA shall ensure strict compliance with Labour Welfare, Health, and Safety Regulations applicable to the project.
- Periodic audits and inspections shall be conducted by the Project/Corporate/ Headquarters HR & HSE Teams.
- Non-compliance or negligence by any contractor shall be reported to Project Management and may lead to penalty or deduction as per contract conditions.

#### **10. Coordination with External Agencies**

The CMA shall coordinate with:

- Local health and labour authorities for inspections and compliance.
- Nearby hospitals and emergency services for referrals and medical emergencies.
- Project HSE and Welfare Officers to align operations with overall project health and safety strategy.

#### **11. Documentation**

The following records shall be maintained and updated regularly under CMA supervision:

- Labour Colony Inspection Register
- Medical Centre Patient Register
- Medicine & Equipment Stock Register
- Ambulance Log Book
- Health Check-up & Awareness Program Register
- Monthly Meeting Minutes and Status Reports
- Cost Register (Fixed & Running Expenses)
- All documents/records shall also be prepared and saved in Digital format.

#### **12. Review and Continuous Improvement**

- The CMA's performance and activities shall be reviewed quarterly by Project/Corporate/ Headquarters HR & HSE Teams.
- Worker feedback and inspection findings shall be used for continuous improvement.
- This SOP shall be revised annually or as required by management or statutory authorities.

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