CROSS-LEARNING WORKSHOP

FAECAL SLUDGE TREATMENT PLANTS
ENSURING THEIR SUSTAINABLE OPERATION

Occupational Health and Safety at FSTPs

September 25th & 26th 2023, Dhaka, Bangladesh
Structure of Presentation

Contents...

- Occupational Health and Safety in India
- What is Hazard?
- Types of Hazard
- What is Risk?
- Hazard Identification and Risk Analysis
What do you observe?
Manual Scavenging and FSSM


- Faecal Sludge and Septage Management Policies 2017

  - ULB officials, desludging operators and FSTP operators are aware about the policies
  
  - None had complete understanding and implications of the Rules and Act.
  
  - ULB officials did not know the list of PPE made mandatory under Rehabilitation Rules 2013

HSE experts say “Lack of Awareness” as one of the main reasons for not adhering to Occupational Health and Safety Laws in India.
Standard Operating Procedure (SOP) for Cleaning of Sewers and Septic Tanks

Central Public Health and Environmental Engineering Organization (CPHEEO)
Ministry of Housing and Urban Affairs
Government of India

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What is Hazard?

Conditions at work –
- Source of potential damage or harm,
- Have adverse health effect
- Something or someone

Type of hazards –
- Natural hazard – Environmental phenomena,
  - Can be predicted
  - Earthquake cyclone, River flooding etc.
- Man made hazard
Types of Hazards

**Biological Hazard**
- Originates in biological processes of living organisms

**Chemical Hazard**
- Intrinsic properties of chemicals can cause harm

**Ergonomic Hazard**
- Strains and stresses on the body caused by workplace motions and body positions

**Mechanical Hazard**
- Hazard involving a machine or industrial process

**Physical Hazard**
- Common hazards that cause immediate injuries and illness

**Psychosocial Hazard**
- Affect the psychological wellbeing of people
Physical Hazards

Common hazards that cause immediate injuries and illness

Slips, trips, and falls due to slippery, sloping or in-proper access

Risk of receiving pinch, and cuts from sharp edges or objects
Ergonomic Hazard

Strains and stresses on the body caused by workplace motions and body positions.

Poorly designed work areas, repeated motions, lifting heavy weights. Poorly designed or maintained tools - awkward movements or contort body.
Chemical Hazards

Things that can cause harm when one is exposed

- Flammable or toxic gases such as Methane (CH₄) and Hydrogen Sulphide (H₂S).
- Chemical based treatment agents
- Exhaust gases from DG and Pumps
Psychological Hazards

Affects psychological well-being of the person

Least acceptance by the society
Belong to lower caste

Consume intoxicating substances to overcome mental block
Mechanical Hazards

Hazards involving a machine or industrial process

**WARNING**
Rotating shaft can cause severe injury. Keep hair and loose clothing away.

Crushing

Shearing

Cutting

Entanglement

Drawing-in or trapping

Stabbing or puncture
Highest Risk in FSSM?
What is risk?

- Chance or probability
- Person will be harmed
- Experience an adverse health effect

\[
\text{HAZARD} \times \text{EXPOSURE} = \text{RISK}
\]

Suffocation
Unconsciousness
Death

Entry into the septic tank
Need of safety and Health Program

- To prevent work related injuries, illnesses, and deaths
- To avoid suffering and financial adversity these events can cause for workers, their families and employers
- Improvements in productivity and quality
- Better employee morale
- Improved employee recruiting and retention
- A more favorable image and reputation among customers, suppliers, and the community
### OHS examples

**Hazard**: Physical, Ergonomic & Biological Hazard

**Inherently safe design**: Provision of proper screens at the receiving station. Proper standing platform with guard rails.

**Hazard**: Ergonomic Hazard

**Inherently safe design**: Ramp for wheel barrow

**Administrative control**: Appropriate training should be provided to the workers in lifting heavy objects.

**Hazard**: Ergonomic & Biological Hazard

**Inherently safe design**: Easy access for raking the screens

**Engineering control**: A raking tool with long handle so as to avoid splashes of waste on to the hands and body.

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**Recommended PPE**

- Mechanical resistant gloves
- High visibility shirts and pants full sleeves
- Steel toe ankle length safety shoes
- N 95 Mask
- General safety glasses
Hazard: Physical, Biological & Ergonomic

Inherently safe design:

- Provision of inlet pipe (as shown in the picture) for decanting the septage at the receiving station. Significantly reduces the risk of hazards and more number of trucks to be emptied in working hours.
- Provision of hand and eye wash station near the receiving station for emergency use.
- Provision of water (preferably pressurized) to clean the spillage if any.

Lack of *illumination* and *ventilation* for the workers to be able to perform their job comfortably.

Ventilation of spaces where risk of fire hazard is high is important.
Myths about PPE

- One type / combination of PPE serves all jobs / tasks and protects workers from hazards!
- One size fits all!
- High visibility is the only purpose of the using body protection PPE.
- Protection from spillage and splash is the only purpose of wearing safety shoes.
- Hard hats are always necessary.
Thank you!

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