

## Health & Safety Environment (HSE) Management for **Greater Nile Petroleum Operating Company (GNPOC), Sudan**

A Health, Safety & Environment Management System (HSEMS) plays a significant role in assisting the HSE department in finding right direction to reduce the HSE risk. Health, Safety and Environment managers in both the public and private sectors face increasing pressures to reduce emissions and waste, conserve energy and water, emit fewer greenhouse gases, and institute "green" purchasing and product design. Moreover, these managers are trying to increase safety statistics



#3, CSM Complex, STPI,  
Priyadarshini Market,  
CRPF Square, Bhubaneswar,  
Pin : 751013, Orissa.

## Business Challenge

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Meeting these objectives requires approaches and techniques that go beyond traditional compliance programs. HSEMS helps GNPOC to find and capture opportunities to improve management of their Health, Safety and Environment (HSE) performance.

Using a strategic perspective, formal management system principles, and effective compliance management activities, HSEMS helps GNPOC in reducing HSE risks. These risks include process safety; threats to the environment, local community, or employees; transportation of hazardous materials; liabilities and costs of noncompliance; delays in implementing projects or organizational mission; low performance ratings or public image; and damage to stakeholder relationships.

GNPOC conducts business in a manner that does not harm people or the environment and facilitates this commitment through a Health, Safety and Environmental (HSE) Management System which includes:

- Measurable goals promoting continual improvement toward zero incidents and the prevention of pollution.
- Visible management commitment, effective communication and training to ensure environmental protection, as well as the safety and health of our employees and the community.
- Line management accountability for HSE matters and the individual contribution of all employees.
- Recognition by all employees and contractors that safety and environmental protection is a condition of employment and that they are responsible for their safety and the safety of those around them.
- Integration of HSE considerations, including identifying and controlling risks and impacts into our business decisions, plans and operations.
- Periodic audits and reviews of HSE systems and performance.
- Compliance with applicable legislation, regulations and relevant industry standards.
- Providing appropriate resources to implement this policy, including making it available to the public and employees.

| Objective  | Means   |
|--|---|
| To support HSE Department.                               | Unlike larger organizations are unlikely to have access to specialist HSEMS. The HSEMS will guide users to a wide range of affordable information resources and services. The information and activity provided will help HSE people comply with regulation and run their safety activity more effectively. |
| Encourage safety growth by supporting the establishment. | Provide HSE department with the support and advice that they need to establish successful safety campaign.  |
| To exploit the benefits of safety activity.              | Draw upon the combined strengths of the members of the HSE department through strategic safety planning.  |

### Safety Objectives

- Promote workplace safety by education, information, instruction and training
- Ensure that adequate instruction is given to employees in safe working procedures and that they are informed of any hazard to their health which is known to be associated with work, including off-campus activities in which they are engaged
- Ensure that situations or work practices which are unsafe or harmful are reported immediately to the supervisor of the employee, so that corrective action can be taken
- Encourage each person in the GNPOC to regard accident prevention as an individual responsibility
- Require the head of departments to apply relevant Policies and Procedures of the GNPOC, as published in the Environment Health and Safety Manual, to the specific needs of the Department, including where staff are located at another site in consultation with staff of the Risk Management Office and local staff
- Establish procedures to check Health Safety and Environment (HSE) standards in any other location or country that staff may be working
- Require that every hazardous incident in the GNPOC is reported and, where appropriate investigated, and ensure any action necessary to reduce further risk is implemented
- Establish procedures for the evacuation of buildings in the event of fire, explosion or other emergencies and ensure those procedures are appropriately tested

## Solution

The proposed solution will be executed in two phases,  
Phase I - Without Approval Process Flow  
Phase II - With Approval Process Flow

There are two kinds of HSEMS users which will be useful for the proposed solution for GNPOC:

### **HSEMS Authority User:**

HSEMS is managed back stage by an Authority User who is responsible for running the show throughout the GNPOC. This user has rights over and above the users and sector or location administrators (if any) in the GNPOC. The role of this user is to enter the master data like ENRRI Parameters, Standards, Oil Fields which will be useful to the general user to use the application.

Once the system is installed, either the network administrator or the system administrator of GNPOC has to create the first user of HSEMS - The Authority User. This person would be responsible for carrying the system forward. This process again is accentuated with a user friendly wizard who asks you question specific to the role of the first user (the authority user).

### **General User:**

HSEMS run with unique user identification for each user. These users who assign themselves a password and use HSEMS are the Users of the system. A user is generally created by an administrator who is also responsible for giving rights to the former to view and use HSEMS. The general users can be treated as HSE User.

As access to information is different for different people, HSEMS also has rights to segregate people with. Users can have filtration of information by way of their hierarchy set while constructing GNPOC in HSEMS. Also users may have different rights for information. HSEMS differentiates these accesses to information by providing few users with only 'view' rights, few with both 'add & view' and the rest with 'manage' rights. In other words, system can alienate information according to grades of an employee in GNPOC.

In the proposed system every HSEMS user will be an authenticate users. They have to register with the system and the administrator will have to authenticate them. The registered user will have two options in the system to get them authenticated. If the HSE user fills the form and click on submit, this will go to the admin for authentication, but if the admin creates the portal user id then it doesn't requires any authentication.

The first and the foremost thing which the system will be based on is the organization structure. The internal users are mapped to the respective reporting authority. We assume here that the organization has the users who are reporting to their reporting authority. In actual case it may deviate from our proposed system.

The basic idea behind the proposed system is to centralize the HSE information for the safety process in the GNPOC. The system will be referred as HSEMS that automates and facilitates GNPOC's safety activity processes. The primary functional areas in the HSEMS will be: filling of the SIIR form online, filling of the values for each ENRRI parameters and for each oil fields etc. For each process flow the hierarchy will be maintain as followed in the GNPOC HSE Department. This means that, a HSE user will initiate a process for SIIR application and this will go to his immediate supervisor. The supervisor approves it for the department head to do the necessary action. Then the form reaches to the head office from the field and finally goes to the HSEMS authority for publishing in the portal. The data captured by the HSE user in the system will stored in a central location so that there will be a minimum risk of losing the data. There will be a single point interaction with the data (Administrator).

## Results

### **Seamless integration**

Built on a highly scalable, web-enabled open architecture, the framework can seamlessly Integrate uncoordinated employment processes on a single interface.

### **Effective process management**

The framework provides an extremely flexible and customizable administration and security system.

### **Approval Management**

The framework provides customized approval process that span the entire spectrum of employment process management needs from structured to unstructured workflows.

### **Increased competitiveness and productivity**

This framework will increase GNPOC value and combine two of its main assets: people -knowledge worker and knowledgebase their information system.

### **Portal Administration**

Enables you to create authenticated users and assign passwords and access rights to each user. It also allows the assignment of entering the master data. Supervisors, Department Head approval rights and user approver Id's along with work flow mechanism for controlling automated publishing of HSE on the portal with or without second party approval.



At CSM, we understand the critical nature of keeping the customer's organization up and running from an IT perspective. We understand the technical issues within complex systems and work to put together the best solution to support end users' needs, both today and in the future.

Cybertech Software and Multimedia (P) Ltd.,  
#3, CSM Complex, Software Technology Parks of India(STPI),  
Priyadarshini Market, CRPF Square, Bhubaneswar,  
Dist: Khurda, Pin :751013, Orissa.  
Phone No. +91674-2561462  
Email. Sales@csmpl.com