Title: Moving the EMP from the Shelf to the Field in Shell Petroleum Development Company, Nigeria.
(Paper)
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Abstract

It is less than a decade since Environmental Impact Assessment (EIA) studies became a statutory requirement for projects in the oil and gas industry in Nigeria. The practice has grown rapidly in this time and has engendered a growth in the public's awareness of environmental issues. The Environmental Management Plan (EMP) is a key component of an EIA study. The EMP identifies and provides the basis for managing the significant adverse impacts of all phases of a proposed project on the environment. The success of an EIA rests on the effective implementation of its EMP.

One of the requirements of the regulatory approval for an EIA is the implementation of its EMP. Shell Petroleum Development Company's Eastern Division (SPDC-E) obtained regulatory approval for EIA on thirty projects between 1997 and 2002. Of the thirty EIAs, only three have records of EMP implementation and even these commenced late in the construction phase of the projects. A few of the factors hindering the effective implementation of EMP in SPDC-E are poorly developed EMP, a lack of understanding of the EMP, insufficient commitment on the part project executors, absence of a framework for EMP implementation on a project and weak internal and external supervision of implementation.)

This gap between our talk and our walk has been identified and a new SPDC EIA process manual has put in place measures to close this gap. The manual stipulates that the EMP be extracted form the EIA as a stand-alone document to be endorsed by the project executor. This measure

underscores the importance of the EMP and secures the commitment of the project executor to its full implementation.

This paper presents a case study of the EMP implementation on the Cawthorne Channel Associated Gas Gathering project. It also highlights the efforts of SPDC at ensuring that the objectives of the EMP, the protection and restoration of the environment, are realized in all her projects. Finally, the paper draws attention aspects of this endeavor that can be further improved.)

Key words: Environmental Impact Assessment, Environmental Management Plan, and implementation, Shell Petroleum Development Company, Associated Gas Gathering

Conference topic: Environmental follow-up

Introduction

The assessment of the environmental impacts of a project in an EIA report is both a statutory requirement in Nigeria and a requirement of the Shell Group. The EIA report must identify the significant potential adverse impacts of the project and provide a mechanism for monitoring and mitigating these impacts. The EMP is the tool for managing the adverse impacts identified in the EIA of a project; it specifies the guidelines and procedures for managing each identified potential impact.

An effective EMP is usually a stand-alone document. It outlines the predicted adverse impacts, the mitigation measures, monitoring protocols and inspections. A properly structured EMP also sets out the audit and review procedures that will ensure compliance with environmental laws and regulations and company policies. The EMP is structured like a typical Health, Safety & Environment Management System (HSE-MS) as shown in Fig 1.0 for continual improvement.

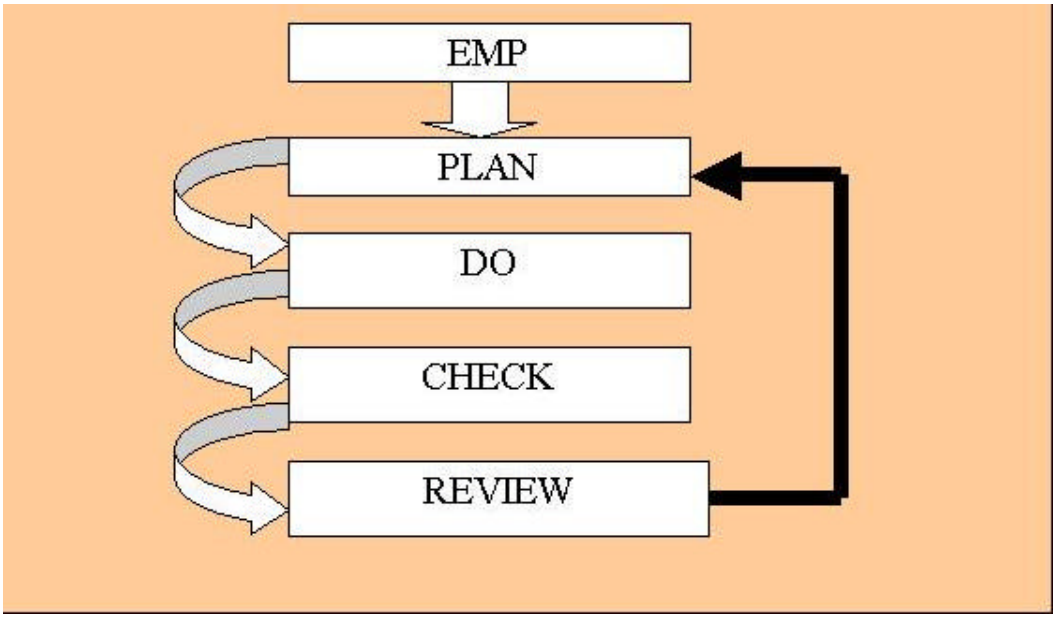

Fig 1.0: EMP Structure

The EMP is often referred to, as the "aftercare product" of an EIA because it is the final product of the EIA. The Department of Petroleum Resources (DPR) and the Federal Ministry of Environment (FMENV), the environmental regulators of the oil and gas industry in Nigeria, grant approvals for project development in the Niger Delta subject to the mandatory implementation of the EMP. The success of an EIA is therefore totally dependent on the effective implementation of the EMP.

Components of an EMP

The basic components of an EMP are

- Summary of the predicted impacts: Itemizes all significant potential adverse impacts of the various phases of the project as identified in the EIA
- Recommended mitigation measures: The mitigation measures are used to eliminate, reduce or offset the predicted adverse impacts.
- Monitoring protocol: Monitoring enables project proponents to check the effectiveness of mitigation measures
- Procedure for inspection, audit and review: Inspections, Audits and reviews are done to assess the actual environmental impact, the accuracy of prediction, the effectiveness of environmental

impact mitigation and enhancement measures, the functioning of monitoring mechanisms and compliance with regulatory standards.

The mitigative measures are of no value unless they are implemented. Therefore, a suitable monitoring regime must be developed for each measure, this may also assist in identifying impacts that were not anticipated in the EIA.

Additional components that will ensure effective EMP implementation include

1. Summary of applicable regulatory requirements.
2. Implementation schedule including action party and timing
3. Estimated costs of EMP implementation
4. Waste management plan
5. Emergency response procedures

Figure 2.0 shows the relationship between the main components of the EMP.

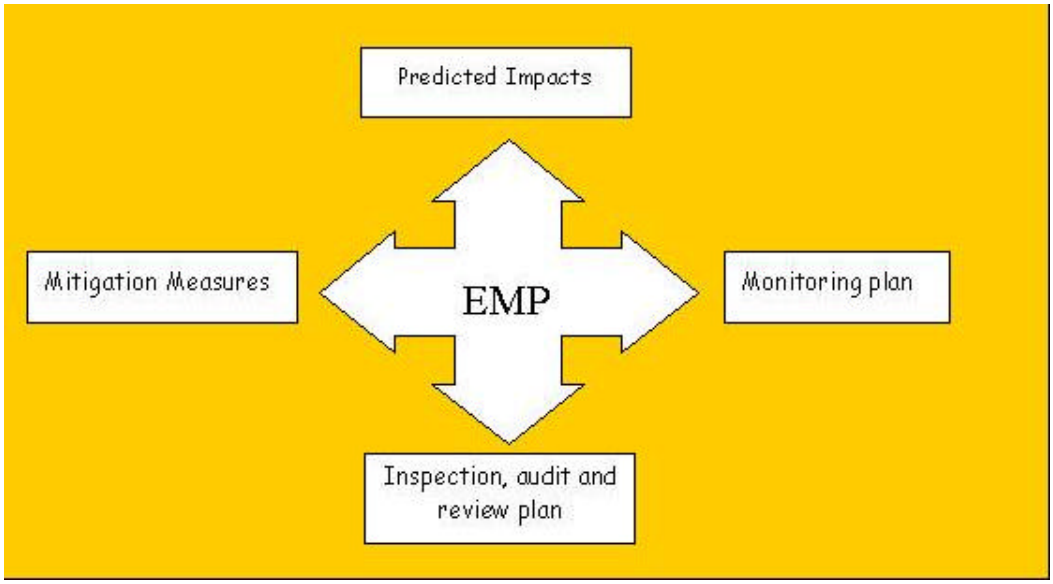

Figure 2.0 Components of an EMP

The problem

An internal review of EMP implementation on SPDC projects by A.G. Yammama (1997) revealed a poor record of EMP implementation across the organization. The regulators also confirmed this during an impact

mitigation-monitoring visit in 2001 by FMENV and the quarterly review meetings held with DPR in 2003.

A review of the 30 projects with EIA approvals executed by SPDC-E between 1997 and 2002 revealed that only 3 of the 30 projects implemented the EMP as stipulated in EIA approvals obtained for the projects. Further investigation showed that the practice amongst project teams was to "forget" the EIA report on the shelf as soon as the approval for project development is obtained. The condition for the approval, one of which is the implementation of the EMP, is also "forgotten" along with the report.

Furthermore it was also revealed that

- On completion of a project, the hand-over of the project to the operators of the asset (the asset teams) by the project implementation team does not highlight the provisions attached to the EIA approval. Therefore there is lack of awareness for EMP implementation by the asset team.
- The asset teams usually cannot locate their copy of the EIA report and therefore probably unaware of its content.
- Due to the size of EIA reports the document is hardly read by the asset team once EIA approval has been obtained
- The EMPs in the reports were generic and lacked details on how the EMP was to be monitored

Finally, in the few cases where EMPs were being implemented, the scope of work was developed using the compliance monitoring guidelines by DPR instead of the specific recommendations in the EIA report. Records of inspections, audits and reviews of EMPs were non-existent. The monitoring results were also not evaluated against the predictions of the EIA, therefore the accuracy and effectiveness of mitigation measures could not be determined.

The Business Need for EMP implementation

It is important for SPDC to conduct its business in a socially and environmentally responsible manner within the Niger Delta. This is acknowledged by the SPDC's HSE policy requirement of continuous improvement in measures to protect the environment in its operations. In addition to being a regulatory requirement, the implementation of the EMP deriving from an EIA is therefore a part of SPDC's core business.

The non-implementation of the EMP could result in

- Withdrawal on EIA permits and/or fines by regulators
- Shut-down of activities by host communities and/or regulators
- Litigation on the grounds of non-compliance
- Loss of reputation

However, the benefits in proper EMP implementation are

- Impacts do not exceed regulatory limits
- Effectiveness of mitigative measures are measured
- The company's reputation is enhanced
- Litigation is avoided
- Demonstrable control over the environmental impact of its business

Actions Taken

The central nature of the implementation of EMP to SPDC's business and results of the reviews mentioned above made changes in the way EMPs were developed and actualized imperative. The EIA document had to be made more "user friendly" so that it can be taken to project sites for monitoring mitigative measures. The project team also had to take ownership of the document.

These recommendations were captured in the EIA improvement document. This required that the EMP be made a stand-alone document to be signed off by the project manager to ensure that the project team takes ownership of the document and demonstrate commitment to its implementation. This "slimmed down" version of the document also presented the document in a format that was fit for purpose and cost effective to implement. It is believed that this process will make EMP implementation an integral part of the business and ensure projects are delivered in an environmentally friendly manner and the business operated managed in a manner that is sustainable.

A Case Study of Cawthorne Channel AGG EMP Implementation

Associated gas is gas that is produced in the process of extracting crude oil. Associated gas is usually flared in SPDC operations. Gas flaring leads to the pollution of the atmosphere with particulate matter and oxides of carbon and nitrogen that contribute to global warming. Currently, SPDC has a flares-out policy to ensure routine gas flaring is stopped by 2008.

Gas gathering projects are on-going to ensure this target is achieved. The Cawthorne Channel (CAWC) Associated Gas Gathering project will deliver 200 mmscf/d of associated gas that was being flared from five flow stations for sale to various customers and for maintenance of reservoir pressure though gas injection. The EIA for the project obtained regulatory approval in October 1999. Currently, there are two contractors working on the project and there is some level of EMP implementation.

The EMP implementation for this project is however poor because of shortcomings in the development of the EMP. The cost implications of the implementation of the EMP were not spelt out, roles and responsibilities of various action parties are not clear and a project specific emergency response plan was not developed.

In addition, project contractors were unaware of the monitoring requirements of the EIA when activities commenced and this was not included in their contracts. EMP monitoring has cost implications for the contractor and it is important to obtain their buy-in before they tender for the contract, this was not done. Therefore the EMP implementation started only after the construction phase had commenced, consequently only a partial implementation of the EMP was observed. (Table 1.0)

Table 1.0: EMP implementation Status

EMP Content	Status of Implementation
Appointment of an Environmental liaison officer (ELO)	Implemented
Site inspections and audit	Not in the EMP document
Implementation of mitigation measures	No report on implementation
Reporting	Reporting format not stated
Environmental Monitoring	Currently done by project executors
Adherence to construction guideline	No evidence of implementation

Current Practice

In SPDC, EMP documents are now prepared as stand-alone documents once approval is obtained for the EIA. This will usually contain the adverse impacts, the mitigation measures, parameters to be monitored, and frequency of the monitoring and also the responsibilities of all

parties in the process. Provision is also made for the documentation of changes made to any monitoring regime. The document is then discussed with the project team and signed off by the project manager.

Challenges faced

Even with these improvements, there are still challenges in the implementation of EMPs. Project teams have complained that, currently the role of ensuring EMP implementation is not assigned to a focal point. Though some of these teams have line HSE personnel, the implementation of the EMP is not their priority.

Also, the cost for the monitoring is not contained in the contract agreements that have already been signed. This was not a part of the invitation to tender for the project. The contractor therefore, would not also be able to implement the EMP. Thus, though some teams are ready to ensure the EMP is implemented, they are hindered by lack of funds and can only implement the EMP when funds are available.

There is also the question of attitude. EIA documents are seldom read and the reports quickly become shelf documents soon forgotten. Some project engineers do not regard environmental issues as 'core business' and they do not recognize the criticality of the caveat placed on the EIA approval. The consequence is still therefore none implementation or poor EMP implementation for projects.

Areas for Improvement

Improvement of the content of EMP is required to ensure proposed mitigative measures are practically achievable. Though this is currently on going, cost implications and reporting format are not currently included in the EMP document. Areas of improvement include but are not limited to;

- Inclusions of the details of the parameters to be monitored in contract tender packages to ensure contractors are aware of the cost implications of EMP monitoring. Contractors would therefore allocate costs for the different parameters to be monitored and this would be a key deliverable in the contract agreement.

- The appointment of Environmental Liaison Officers (ELOs) would ensure EMP implementation has a single point responsibility within

the project team. The officer who would be field based, will drive the implementation process and document any changes made. This officer would also be the contact person when regulators visit the project for impact mitigation monitoring.

- During the various stages of the project there is the need for SPDC to audit the status of EMP implementation. This would ensure that EMP implementation is done without the prompting of the regulators and is seen as a way of continuous improvement in the business and becomes an integral part of every project. The proposed monitoring team would comprise representatives from the environment, project and audit teams of SPDC community representatives, and NGOs

- Awareness training is also required for project executors. This will ensure they do not continue to park EIA document on the shelf and are aware of the provisions of approval, the benefits of EMP implementation and consequences of non-implementation. Feedback from the executors would also help in improving the content of the EMP with regards to the practicability of some mitigative measures proffered and cost implications.

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