



**DEPARTMENT OF PETROLEUM RESOURCES  
7, KOFO ABAYOMI STREET VICTORIA ISLAND  
LAGOS**

Applicable to all Operators  
Upstream and Downstream

**GUIDELINES FOR COMPLIANCE WITH THE TECHNICAL SAFETY  
CONTROL (TSC) REQUIREMENTS**

**ORIG DEPT: Technical  
Services**

## **GUIDELINES FOR COMPLIANCE WITH THE TECHNICAL SAFETY CONTROL (TSC) REQUIREMENTS**

*ISSUED BY*

### **THE DEPARTMENT OF PETROLEUM RESOURCES 2006**

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## **1. PREAMBLE:**

### **1.1 Legal Provisions And Scope**

This guide is issued, pursuant to the provisions of The Mineral Oils (Safety) Regulations (MOSR) 1997 and all other related provisions of the DPR Procedure Guide for the Construction and Maintenance of Fixed Offshore Platforms/Oil & Gas Facilities”. It shall be applicable to all major phases in the life cycle of facilities development/modification projects namely:

- (a) Conceptual and Front End Engineering Phase
- (b) Engineering Design Phase
- (c) Procurement & Construction Phase
- (d) Commissioning Phase

It shall apply to all petroleum handling facilities in the **Nigerian Petroleum Industry**

**1.3** It spells out the statutory procedures that must be followed by operators in achieving full compliance with the TSC requirements of their Facilities Development/Modification Projects.

**1.4** Its effective date shall be when it is introduced by DPR for use by the industry.

**1.5** The provisions of this guide supplement all other similar provisions contained in the Regulation/Procedure Guide cited in 1.1 above.

## **2. PROJECT SAFETY INFORMATION/DOCUMENTATION**

This Safety information which shall generally be in the form of project design drawings/documentation, but conveying relevant information required for the Technical Safety Control Reviews/Studies, shall be forwarded early (preferably 1 month to scheduled review) for DPR’s Safety Preview preparatory to each scheduled TSC Study/Review meeting. The operator shall also make available at the Review meeting(s), copies of necessary Industry Standards/Recommended Practice(s) (RPs) e.g. API RP 14C, 14J, 75, 500;

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Equipment data sheets, etc; to complement the Safety Information/ documentation available for review at the meeting.

### **3. SCHEDULING OF TSC REVIEW MEETING/STUDY**

This shall generally be at the discretion of the operator. However, the timing and duration of each meeting shall be chosen such that adequate technical coverage of the Objectives and Scope of the proposed Study/Review is achieved. The operator shall give early written notification (preferably 1 month to scheduled TSC Review meeting/activity) to DPR, and also ensure adequate arrangements for the participation of DPR Safety Engineers at the proposed meeting.

### **4. RISK BASED EVALUATION CONCEPT**

The Department of Petroleum Resources is aware of the emergence and potential growth of this Safety Analytical Tool/Concept in the industry. As far as it is reasonably practicable, and provided it is not grossly at variance with relevant statutory safety requirements of the project; operators shall be encouraged to employ and apply the tool to add value to their operations.

In employing the Risk Based Evaluation/Inspection tool: The operator shall ensure that the choice of model (and its implementation) for Planning, Construction, Commissioning, Maintenance/Modification of the Facilities, are carried out with due participation of DPR Safety Engineer(s).

### **5. APPLICATION OF TSC REQUIREMENTS FOR FACILITY DESIGN, CONSTRUCTION, & MODIFICATION PROJECTS.**

#### **5.1 CONCEPTUAL & FRONT-END ENGINEERING DESIGN STAGE:**

##### ***5.1.1 CONCEPTUAL STAGE***

- The Operator shall submit the project's Concept Selection Studies Report for DPR's Review.

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- Conducts a project's Concept Safety Evaluation (CSE) Studies/Review with DPR participation.

### **5.1.2 FRONT-END ENGINEERING DESIGN (FEED) STAGE**

The Operator shall ensure that DPR Safety Engineers participate fully in the following Technical Safety Control (TSC) Studies/Reviews as they come up during the FEED phase of the project:-

- (a) Qualitative Risk Assessment Review.
- (b) PFDs, P&IDs, & Coarse HAZOPS and/or HAZID Reviews.
- (c) Project Specifications Review.
- (d) Project Safety Case/HSE Reviews.

**5.1.3** In line with the provisions of Section 2 of The Mineral Oils (Safety) Regulation 1997, the operator shall ensure that all Project Safety Information/Documentation CONCERNING THE ABOVE Reviews/Studies, are forwarded early, for DPR's Safety Preview preparatory to each scheduled review meeting.

## **5.2 DETAILED ENGINEERING DESIGN STAGE**

**5.2.1** To adequately address all Process, Layout & Equipment Safety concerns as well as regulatory issues at this stage, the operator shall ensure the participation of DPR Safety Engineers in the following TSC Studies/Reviews on the project:

- (a) PFDs, P & IDs, & SAFE CHART Reviews.
- (b) Detailed HAZOPS, SAFOPS, IPF Classification and/or HAZAN Reviews.
- (c) Quantitative Risk Assessment Review/Study
- (d) Equipment Layout, Hazardous Area Classification (HAC), Fire & Explosion Study(FES), FIRE PROtection ANalysis (FIREPRAN), Escape - Evacuation - Rescue (EER) Studies/Reviews.
- (e) Safety Review/Criticality Ranking of Major Equipment.
- (f) Project Specification Review.

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**5.2.2** In line with the provisions of section 2 of the MOSR 1997, the operator shall forward all necessary Project Safety Information & Documentation pertaining to the above Reviews/Studies early, for DPR's Safety Preview preparatory to each scheduled review meeting.

### **5.3 PROCUREMENT & CONSTRUCTION**

The Operator shall ensure that DPR Safety Engineers participate in the following Safety Critical Activities:-

- a) Safety Critical equipment (Long Lead Items) and Quality Assurance Inspection/Testing at Vendor's shop (s).
- b) Functional Testing of Corrosion & Fire Protection Equipment at vendors' shop(s).
- c) All In-House Project Workshops (Training organised in preparation for Pre-Commissioning/Commissioning of the project facilities.
- d) Monthly joint Safety Inspection (during installation at site), to ensure adequate compliance with Project HSE Plan.
- e) Pre-Start Up Safety Audit of the Project facilities.

### **D COMMISSIONING**

The operator shall ensure that a Pre-commissioning Inspection by DPR team is carried out in accordance with section 3.2.1. (iii) of applicable DPR Procedure Guide for the Design, Construction, & Maintenance of the Facility.

### **E LEGEND:**

<b>DPR:</b>	<b>Department Of Petroleum Resources.</b>
<b>MOSR:</b>	<b>Mineral Oils (Safety) Regulations 1997.</b>
<b>TSC:</b>	<b>Technical Safety Control</b>
<b>CSE:</b>	<b>Concept Safety Evaluation</b>
<b>PFDs:</b>	<b>Process Flow Diagrams.</b>
<b>P &amp; IDs:</b>	<b>Piping &amp; Instrumentation Diagrams.</b>
<b>SAFE CHART:</b>	<b>Safety &amp; Function Evaluation Chart.</b>

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<b>API RP:</b>	<b>American Petroleum Institute Recommended Practices.</b>
<b>HAZOPS:</b>	<b>Hazards &amp; Operability Study.</b>
<b>HAZAN:</b>	<b>Hazards Analysis.</b>
<b>HAZIDS:</b>	<b>Hazards Identification Study.</b>
<b>SAFOPS:</b>	<b>Safety &amp; Operability/Operations Study.</b>
<b>HAC:</b>	<b>Hazardous Area Classification Study.</b>
<b>IPF Class:</b>	<b>Instruments Protective Functions Classification Study.</b>
<b>FIREPRAN:</b>	<b>FIRE Protection Analysis.</b>
<b>FES:</b>	<b>Fire &amp; Explosion Study.</b>
<b>EER:</b>	<b>Escape,Evacuation, &amp; Rescue Study.</b>
<b>QA/QC:</b>	<b>Quality Assurance/Quality Control.</b>
<b>LLI:</b>	<b>Long Lead Equipment Items.</b>

**THE DEPARTMENT OF PETROLEUM RESOURCES**  
**JUNE, 2000.**