



**MINISTRY OF ENERGY AND ENERGY INDUSTRIES
REPUBLIC OF TRINIDAD AND TOBAGO**

TECHNICAL GUIDANCE DOCUMENT- GD 01

**GUIDE TO MEEI'S APPROVAL REGIME
FOR
ENERGY-BASED FACILITIES**

STATUTORY INSTRUMENT

HEALTH, SAFETY AND ENVIRONMENTAL/MEASUREMENT DIVISION

CONTENTS

NO	DESCRIPTION	PAGE(S)
1.	Intent of Guide	3
2.	Introduction	4,5
3.	Authority	5
4.	Drivers for Approval Regime	5
5.	Objectives of Approval Regime	6
6.	Scope and Applicability	6,7
7.	Limitations	7
8.	Rationale for Approval Regime	7,8
9.	Approval Criteria	8
10.	Fit-for-Purpose Verification	9,10
11.	Operational Preparedness Verification	10
12.	Issuance of Approval	10
13.	Rules governing an Approval	11
14.	Information Requirements	11
15.	Role of Certified Verification Agent	12
16.	Queries	12
17.	Enforcement	12

1. Intent of Guide

The Petroleum Act and Subsidiary Regulations empowers the Minister, through his designated Ministry, the Ministry of Energy and Energy Industries (MEEI), with the authority to implement and maintain effective regulatory control over the energy sector of Trinidad and Tobago.

One of the means of having control over the energy sector is the legal provision requiring approval of all energy-based facilities and associated infrastructure. However, the intricacies of the related processes for achieving such a control is not explicitly stated in the over arching laws governing the energy sector because of the goal setting format or nature in which the laws are presented.

The Petroleum Act and Subsidiary Regulations laws places the onus on the MEEI for prescribing the rules, standards and procedures for achieving the objectives of the legal requirements and this guidance document tries to achieve this objective by providing the framework for the MEEI's Approval Regime.

Supporting this guidance document are additional guidance documents that deals with specific areas of interest and which makes up the full suite of guidance documents as follows:

- 1) Guide to the MEEI's Approval Regime for Energy Based Facilities
- 2) Role of the Certified Verification Agent in MEEI's Approval Regime
- 3) Verification Scheme for Offshore Structures, GD 03
- 4) Verification Scheme for Pipeline Systems, GD 04
- 5) Verification Scheme for Hydrocarbon Production and Processing Facilities, GD 05

This guidance document seeks to bridge knowledge gaps and clarify any ambiguity the industry and general public may have about the requirements of MEEI for approving energy based facilities that operate in Trinidad and Tobago. It also serves to inform all relevant stakeholders and service providers of the requirements for achieving compliance with the requisite Regulations.

The guide covers the scope, applicability, rationale and general principles behind the prescribed Approval Regime and in accordance Section 8 (1) (b) of the Freedom of Information Act (FOIA) constitutes information on the procedures to be employed or the objectives to be pursued in the enforcement of the written laws or scheme.

2. Introduction

The Ministry of Energy and Energy Industries has as one of its legal obligations the right to ensure that every energy-based facilities and associated infrastructure established within the territorial jurisdiction of Trinidad and Tobago are properly built or acceptable for use which means that it must be capable of meeting performance drivers that are geared towards firstly protection of people, property and the environment, and secondly accurate determination, allocation and accountability of produced resources.

In developing a regime that fulfill the mandate entrusted to the Ministry, the former Operation Section had embarked on an exercise that understudied the different international regulatory models or approaches, which took into account a retrospect look at its former framework for granting approvals, with the intention to critique the merits and limitations for extraction of best practices for application in Trinidad and Tobago. The efforts of this exercise have resulted in the refinement and modernization of the MEEI's regulatory framework for approving energy-based facilities.

Forthcoming from the re-evaluation exercise, the Ministry has recognized that some criteria must be established for determination of whether or not to grant an Approval.

Through the Ministry establishing assurances that intended facilities are properly built or "Fit-for-Purpose" and the duty holder is in a state of "Operational Preparedness" the objective of the Ministry's mandate can be satisfied and hence these two principles forms the criteria for granting of an Approval.

This new Approval Regime has also recognized that the timing in granting of approvals will become an issue with many operators, which requires clarification, especially since the old ways of doing business which involve looking at drawings and information and appending a stamp of approval will no longer be sufficient.

This new regime operates on the principle that project's development plans are screened for acceptance and sanction, after which "Development Plan Approval" is issued which outline the agreed bases on how the project is to be pursued throughout its development phases.

Once a project is sanctioned, its various development phases from planning to commissioning are vetted by the Ministry or its appointed agent for acceptance and verification that the new built facility if capable of accepting first hydrocarbon. The vetting process establishes assurance that the intended facility is "Fit-for-Purpose" and in a state of "Operational Preparedness" and it is only then can the final approval or "Facility Approval" is granted.

This approach adopted by the Ministry towards approval of energy-based facilities has been field tested on several projects before confirmation of final acceptance. During the period of testing, evaluation were undertaken and it was found that the system was more proactive than the former system because it looks at all aspects of the facility's development, as well as provides a mechanism for the Ministry to interface with project teams and make meaningful input to express the State's concerns for appropriate action.

This new approach also facilitates monitoring of projects as they progress towards final completion and makes provision to address problems, changes from approved plans and resolve any disputes that may arise.

3. Authority

The authority vested, as per Petroleum Regulations 1971 of Trinidad and Tobago, in this document as an official Statutory Instrument are cited under the following:

Citation	Regulations	Interpretation (essence and intent)
Regulation 43 (b)	No fixed installation such as gathering station, tanks,. ...and meters shall be erected unless prior notice is given to the Minister and his approval obtained.	"Approval" required from the MEEI for any intended new-built energy based facility and associated infrastructure.
Regulation 92	A pipeline, refinery, petrochemical plant, well, marketing station or any similar installation used for petroleum operations may not be enlarged or substantially altered without the prior written consent of the Minister.	"Approval" required from the MEEI for any intended modification to an existing energy based facility and associated infrastructure that ultimately change the functional purpose and performance expectations.

This document entitled "Guide to MEEI's Approval Regime for Energy Based Facilities" serves to outline the processes and requirements for achieving compliance with Regulation 43 (b) and 92 as well as to inform the energy industry of expected deliverables set out by the Ministry in getting facilities approved.

4. Drivers for Approval Regime

The following drivers or need of the State dictates the Approval Regime:

i. HSE Risk Loss Prevention and Control

Minimize losses and liabilities to the State and national interest through effective prevention and control of Health, Safety and Environmental (HSE) performance of the facility, which if left unchecked can impact negatively and harm people, property and the environment as well as the revenue earning capabilities of the State.

ii. Economic Driver

Aimed at ensuring that the facility can produce and process the resources with minimal wastage at highest quality and measure accurately the final product being sold.

These two drivers constitute two fundamental pillars for sustainability.

5. Objectives of Approval Regime

Though many objectives can be stated, the main objectives behind having a facility approved as per Regulation 43(b) and 92 are as follows:

- a) Ensure compliance with all legislative requirements, locally and internationally.
- b) Ensure energy based operations can conduct their activities in a safe, health conscious and environmentally responsible manner.
- c) Ensure that the economic interests of the State are justly derived and maximized.
- d) Ensure properly engineered or best in class facilities operate in Trinidad and Tobago energy sector.

6. Scope and Applicability

The scope of the approval process as described in this guide is intended for the following class of facilities:

- | | | |
|---------|---|---|
| Class A | - | New-built energy based facility. |
| Class B | - | Modified or upgrade facility |
| Class C | - | Facility that has been restored after a major incident |
| Class D | - | Existing foreign facility that has been relocated to Trinidad |

- Class E - Reinstatement of a formally operational facilities that was mothballed over an extended period of time

The applicability of the approval process is enforceable for all energy-based facility or infrastructure with fixed or floating dedicated operations within the territorial jurisdiction of Trinidad and Tobago and includes but not limited to the following:

a) Fixed land based:

- Gas processing plants
- Petrochemical Plants
- Liquefied Natural Gas (LNG) facilities
- Petrol Service Stations
- Pipelines
- Crude Oil Gathering stations
- Etc.

b) Mobile land based:

- Road tank wagons
- Trailer crude storage
- Etc.

c) Fixed offshore:

- Offshore platforms
- Sub-sea facilities
- Pipelines
- Etc.

d) Floating/ mobile offshore:

- Floating Production Storage and Offloading (FPSO) vessels
- Crude oil shuttle barges
- Well test barges
- Bunkering barges
- Etc.

7. Limitations

Although the principles within this guide can be universally applied, this guide is not intended to address facilities such as Drilling Rigs and Marine Tankers whose services may be international or transboundary in nature and which may fall under certain international and foreign regulations and conventions. However, such vessels or systems will be required to pass relevant regulatory inspections prior to being granted clearance to conduct their activities of interest.

8. Rationale for Approval Regime

In the former regulatory approach employed by the Ministry for granting "Approval" of a new energy based facility, only the "Design" was assessed before approval was granted.

Based on observations at existing operations, approval of a design does not necessarily guarantee that the new built or modified energy based facilities will be capable of achieving the Ministry's goal of having a safe, health conscious and environmentally responsible operations.

Development projects normally incorporate four fundamental stages, namely the Planning, Design, Construction and Commissioning stages that ultimately have some influential role and impact on Safety, Health and the Environment.

In an effort to have greater success in the prevention of losses, the Ministry has understudied different regulatory models and regimes and has refined the existing process for approving energy-based facilities.

Models studies were the Prescriptive Based Regime (e.g. US CFR) and the UK Safety Case Regime. While both these models have their merits, they lack an essential provision for the regulatory entity to have meaningful interaction with projects as they evolve. This drawback has led the MEEI to look at Shipping Industry model i.e. vetting process, which mirrors a peer review process, practiced at energy-based companies.

Fundamentally, what the MEEI wants is the ability the monitor and interact with projects and at the same time have services of qualified and experienced personnel to provide "expert judgment or opinion" to verify and pronounce on the acceptability of the work being delivered and the Shipping industry model facilitates such a process.

Thus, the Ministry's new approach towards approving energy-based facilities is modeled after the Shipping Industry vetting process for Certification and Classification of marine vessels. This approach is also consistent with Petroleum Regulation 29 (5) (a), which requires registration and certification of marine installations engaged in petroleum operations.

The Ministry's new Approval Regime incorporates the concept of "Verification" which is similar to "Certification" in principle. Through verification the MEEI can establish the required assurances for basing the issuance of an approval.

Once the verification assurances are established, the MEEI would have validated that the condition of due diligence was also satisfied and hence established sufficient evidence to legally protect its technical officers who issue the approvals.

9. Approval Criteria

The criteria for granting an approval is based on the Ministry being assured that the proposed facility is "Fit-for-Purpose" and the operator is in a "Operational Preparedness" to commence operations.

In understanding these terms the following interpretations are provided:

“Fit-for-Purpose” shall relate to verifying that all related hardware and software systems and components that constitute the facility were properly designed, built, integrated together and tested for acceptance to ensure that the final facility is capable of delivering the required HSE and/or economic performance expectations.

“Operational Preparedness” shall relate to verifying that the status of the elements of the management system for facilitating proper human interface and control of the facility prior to start up and during operations.

10. Fit-for-Purpose Verification:

The generic verification functions in the approval process incorporates four phases and are summarized as follows:

a) 1st Phase: Planning Verification

Activities in this phase include review of EIA report, Risk Assessment, supporting Front End Engineering Design (FEED) studies, modeling studies, etc.

This phase ensures that all HSE concerns and contentious issues are identified for addressing in subsequent phases.

b) 2nd Phase: Design Verification

Activities in this phase include cross-checking design against local and international standards for compliance, appraisal of calculations for determining sizing and overpressure integrity of equipment, review of completeness of design plans with emphasis on HSE features and provisions, participation on risk reduction exercises such as HAZOPS, HAZIDS, etc.

This phase allows the Ministry to make meaningful inputs into the design and ensure that commitments made in planning verification phase have been incorporated.

c) 3rd Phase: Construction Verification

Activities in this phase include monitoring construction works to ensure conformance with the Approved for Constructions (AFC) Plans, deviation in as-built plans from AFC plans are documented and associated risk reassessed,

defects detected or damages sustained during construction are replaced or rectified to an acceptable standard, correct materials for construction are being used, equipment integration practices are conforming to prescribed standards, all required HSE features and provisions have being installed, etc.

This phase assures the Ministry that the facility is being constructed with the required structural and processing integrity and provides an opportunity to query and address any issues related to equipment integration practices, sustained damages, design oversights, deviations and changes from AFC plans.

d) 4th Phase: Commissioning Verification

Activities in this phase include appraisal of commissioning activities to ensure that all HSE provisions, equipment and appliances have met their acceptance performance criteria, etc.

In this phase, the Ministry has the final control to ensure that companies get their facility to satisfy HSE performance expectations that were specified at the beginning of the approval process.

11. Operational Preparedness Verification

Operational Preparedness Verification deals with the operator's state of readiness to commence official operations and encompasses element of human interface with the facility. A facility can be Fit-for-Purpose and still fail if the people who operated the facility are not properly acquainted with its workings and functionality.

Elements to be evaluated for Operational Preparedness verification shall include but not limited to:

- Designated command-in-chain authority and Accountability
- Training and competence
- Operational procedures
- Contingency and emergency response preparedness
- Asset integrity management
- Permit to work systems

12. Issuance of an Approval

Approval of a new energy based facility is now granted for the final as-built facility and is issued after verification of all development stages to validate Fit-for-Purpose and confirmation of duty holder Operational Preparedness to commence operations.

"Provisional Approval" may be issued to allow the operator to test the system for demonstrating that the intended facility is capable of meeting the required or maximum intended capacity of the system.

Having satisfactorily demonstrated the above, a final "Facility Approval" is then granted before commencement of official operations or handover of facility which ever comes first.

13. Rules governing an Approval

- a) If any duty holder decides to commence operation without requisite approval, the management of that company will do so at their own risk. The legal ramification of this will mean that the facility will not have any legal status and the MEEI will not be able to provide or support any due diligence defense for litigation on any HSE incident that should arise.
- b) It is advisable that duty holders work with the MEEI so in the event there is/are pending matter(s) or problem(s) on a project that prevents the duty holder from meeting contractual obligations, then by having the MEEI appraised at all time, the MEEI will be able to facilitate proposals for best-fit solution(s), provided that they are workable, and accommodate provisional arrangement to facilitate duty holder in meeting their target dates for commencement or reinstatement of operations at the facility.
- c) It must be noted that once an approval is issued, it confirms the baseline status of the facility as being acceptable. However, duty holders are reminded that the facility must pass every regulatory inspections and audits, and should there be any serious violations then the legal status of the approval will become null and void.
- d) Following the approval of a facility, the MEEI reserves the right to request appraisal or re-approval of the facility as specified intervals not exceeding five years. This provision can be waived provided that duty holder submit the relevant annual proof on the fitness of the facility for continued operations.
- e) Re-approval of a facility is required after any modifications that changes original functional purpose, alter HSE risks or performance capabilities, changes efficiency and measurement capabilities, or as ruled by MEEI.

14. Information Requirements

In undertaking the verification requirement, the Ministry will require information of the different systems, features and provisions that make up the facility.

While much of the information requirements might conform to a standard listing issued by the Ministry, each facility may have its own uniqueness and hence would have to be treated on a case-by-case basis.

Operators should always consult with the Ministry to ensure that they satisfy the MEEI's information requirement needs for their specific project.

15. Role of Certified Verification Agent (CVA)

The Ministry reserves the right to request the services of an independent competent body, called Certified Verification Agent (CVA) in the Approval Regime, to assist in the verification functions of the approval process.

The operator or duty holder of the intended facility is typically required to secure the services of the CVA who shall be certified or authorized by the Ministry. The role of the CVA can vary from project to project and shall be guided by the Ministry's Technical Guidance Documents on the various Verification Schemes, for the type of facility under review, as listed in Section 1.0 of this document.

The CVA shall be responsible for undertaking reviews, assessments or surveys, and preparation and submission of "Verification Reports" which shall represent their findings in a factual manner.

16. Queries

Queries on this guidance document can be forwarded to the Office of the Chief Mechanical Engineer with responsibility for formulating and managing the implementation of the Approval Regime.

Mail: Ministry of Energy and Energy Industries
Health, Safety and Environmental/ Measurement Division
70-76 Pointe-a-Pierre Rd
San Fernando
Trinidad

Email: iramdahin@energy.gov.tt

Tel: (868) 652-3126/2075/3070 Ext: 253

Fax: (868) 652-3129

17. Enforcement

Thought this document represents the first published version of the Approval Regime, the contents of this guidance document has been enforced and utilized by energy operators prior to year 2000, and enforcement of the processes and requirements outlined within will continue to maintain it legal effect as required under this Approval Regime.

Version: 001

Dated: July 2006