



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

TECHNICAL GUIDANCE DOCUMENT- GD 02

**THE ROLE OF THE CERTIFIED VERIFICATION AGENT (CVA)
IN
THE MEEI's APPROVAL REGIME**

STATUTORY INSTRUMENT

HEALTH, SAFETY AND ENVIRONMENTAL/MEASUREMENT DIVISION

CONTENTS

ITEM	DESCRIPTION	PAGE(S)
1.	Intent	3
2.	Authority	3
3.	Approval Regime	3, 4
4.	Terms and Definitions	4, 5
5.	Applicability	5, 6
6.	Scope	6
7.	Verification Scheme	7
8.	Purpose of CVA	7, 8
9.	Certification of CVA	8
10.	Criteria for Eligibility	8,9, 10, 11, 12
11.	Selection Process	13, 14
12.	Authorization Process	14, 15, 16
13.	Initiating a Verification Assignment	16, 17
14.	Verification Plan	17, 18
15.	General Description of CVA's role	18,19,20
16.	Reporting Responsibilities	20
17.	Verification Programme	21,22
18.	Verification Reports	22, 23
19.	Ruling on Matters of Special Interest	23, 23, 25
20.	Other matters	
	- Arbitration	25
	- Financing Arrangements	25, 26
21.	References	26
22.	Queries	27
23.	Enforcement	27

1.0 INTENT

This Guidance Document GD 02 is a consolidation of previous verification documents issued by the MEEI and utilized by the energy industry for approving energy-based facilities and associated infrastructure.

The primary intent of this new consolidated document is to provide the audience comprising of the providers of verification services, project undertakers, governmental bodies and member of the public with the following understanding, clarification and insight into the verification requirements and obligations of Ministry of Energy and Energy Industries (MEEI) as it pertains to:

1. Application of the Verification Scheme in the MEEI's Approval Regime to establish the required assurances that will serve as the bases for the granting of regulatory approvals.
2. Identifying the types of project undertakings in various areas of the energy sector, which can become subject to the MEEI's verification requirements.
3. The rationale used by MEEI for outsourcing the technical expertise of independent verification agents to assist the MEEI in its Approval objectives.
4. Eligibility criteria for verification agents who are desirous of pursuing verification assignments in the energy sector of Trinidad and Tobago.
5. Rules governing the screening, nomination and authorization processes for identifying the preferred verification agents for verification assignments in the energy sector of Trinidad and Tobago.
6. Rights, obligations and limitations that authorized verification agents can expected on verification assignments

This document can also be referenced as a universal template for managing the roles and responsibilities of outsourced independent verification agent regardless of the project type.

2.0 AUTHORITY

The contents of this document is enforced and implemented under the authority as cited in Petroleum Regulation 43 (k) of the Petroleum Regulation, 1976 of the Republic of Trinidad and Tobago and is intended to facilitate the purpose of having facilities approved, as required under Petroleum Regulations 43(b) and 92, prior to commencement or recommencement of intended operations.

Petroleum Regulation 43 (k) states: “The Licensee shall be obligated to follow rules and instruction issued by the Minister for time to time in order to secure the well being of people, property, and the environment”.

3.0 APPROVAL REGIME

An “Approval” is one the regulatory or statutory provision required by the MEEI as a Regulatory Authority for determining whether or not an energy-based facility is acceptable for conducting operations in the energy sector of Trinidad and Tobago.

The regime that governs the approval of energy-based facilities as per Guidance Document GD 01, focuses on the technical aspects of a facility to *establish assurances* on its baseline characteristics and overall integrity with specific emphasis on Health, Safety, and Environmental (HSE) performance capabilities in preventing major disaster related events.

Approvals are fundamentally required for the following classes of energy-based projects or activities.

- Class “A” - New-built energy based facility.
- Class “B” - Modified or upgrade facility
- Class “C” - Facility that has to be 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 key criteria for granting an approval of a energy-based facility requires two fundamental assurances, which are based on:

- I. Fit-for-Purpose
- II. Operational Preparedness

The assessment of “Fit-for-Purpose” focuses on the physical facility to ensure that the final facility is properly built and requires expert judgment on the civil, mechanical, electrical and processing infrastructure.

The assessment of “Operational Preparedness” looks at the adequacy of the systems required to manage and support the human interface with the facility and includes operating procedures, training and competence, authority and accountability, contingency and emergency response plans, etc.

4.0 TERMS AND DEFINITIONS

In the Approval Regime and Verification the following terms shall be interpreted as follows:

- a) “Approval” refers to an official authorization granted by MEEI that confirms acceptability of an energy-based facility for conducting operational activities in the territorial jurisdiction of Trinidad and Tobago.
- b) “Facility” or “Energy-based Facility” refers to any infrastructure whether individual or collective assemblage of systems and components used in the production, transportation, processing, storage, and marketing of hydrocarbons resources and its derivatives e.g. fixed offshore platform, refinery or petrochemical plant, sub-sea pipeline, floating production storage and offloading, etc.
- c) “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 performance expectations.
- d) “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.
- e) “Features” shall relate to aspects of the facility that form an integral part or influence in the process stream e.g. ESD, pig launcher and receiver, depressurization and relief, gas detection, etc.
- f) “Provisions” shall relate to aspects of the facility that are necessary for supporting loss prevention and control, and operational activities but do not directly influence the integrity or operability of the facility’s process stream e.g. pedestal cranes, fire tenders, setback distances, escape routes, safe refuge areas, explosion barriers etc.
- g) “Integrity” shall relate to the ability of an engineered system to resist failure by having the required mechanical, civil and electrical performance characteristics to cope with anticipated opposing forces, transients or performance compromising situations or conditions.

5.0 APPLICABILITY

This Guidance Document governing the roles the verification agent in the MEEI Approval Regime is applicable to all sectors of the energy industry within the territorial jurisdiction of Trinidad and Tobago.

The spectrum of its application is spread across the upstream, midstream and downstream industries of the energy sector all of which are required to conform to the MEEI Approval Regime and verification requirements, which includes but not limited to:

I. Fixed land based facilities e.g.

- | | |
|--------------|---|
| Upstream - | Hydrocarbon production, processing and gathering stations, Condensate stabilization, Gas compression stations, etc. |
| Midstream - | Pipelines, Slugcatcher facilities, Natural Gas conditioning facilities, etc. |
| Downstream - | Refineries, petrochemical plants, LPG bottling plant, LNG etc. |

II. Fixed offshore facilities e.g.

- Offshore production/ processing/ gas compression platforms,
- Sub-sea facilities,
- Pipelines
- Export facilities such as SBM/PLEM, loading arms inclusive of piers / jetties
- etc.

III. Floating offshore facilities with dedicated service in T&T waters e.g.

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

6.0 SCOPE

This guidance document is a universal template that outline general principles practiced and enforced by MEEI for approval of all facilities from classes A to E.

Once the MEEI rules that external verification expertise should be outsourced, this document will become the official reference standard for establishing the requirements and performance expectations of the verification process.

Only facilities that have been built, relocated, retrofitted or modified in territorial jurisdiction of Trinidad and Tobago under the watch of the MEEI can be approved by the MEEI.

It must be noted that, the scope of this guidance document does not cover facilities that such as Offshore and Land Drilling Rigs, Crude Oil Tankers, LNG Tankers... etc., that were built outside of Trinidad and Tobago and falls under the auspices of other international jurisdictions or conventions. These facilities are exempted from this MEEI verification requirement provided that the facilities would have undergone a similar technical assurance process that mirrors the MEEI approval regime.

Facilities in unitized fields shared with a neighboring State will have to consult with the MEEI on use of this document before their produced hydrocarbon can be allowed to cross the adjoining border for entry into the territorial jurisdiction of Trinidad and Tobago.

7.0 VERIFICATION SCHEME

In accordance with the MEEI's regime for approving energy-based facilities, one of the key criteria that determines the granting of an approval for a new built, repaired or retrofitted energy-based facility, to facilitate commencement or reinstatement of intended operations, is the need to *establish assurances* that the said facility is "Fit-for-Purpose".

The evaluation process for establishing the required assurances is termed the *Verification Scheme*, which fundamentally mirrors a QA/QC process that vets or meticulously reviews all phases, aspects and inputs that went into the development of a proposed facility (from conception to completion), or repairs / upgrades to improve or reinstate an existing facility.

The verification scheme focuses on risks associated with the facility under review by ensuring that they have been appropriately addressed to alleviate concerns that have the potential to endanger people, property and the environment.

The concept of trying to establish assurances through a verification scheme, currently being applied to the local energy sector of Trinidad and Tobago, was adapted from the international shipping industry, which utilizes the services of marine warranty surveyors as independent competent bodies to vet the development of ships.

The objectives of the verification scheme as it pertains to "Fit-for-Purpose", fundamentally focuses on confirming:

- the integrity and adequacy of various independent and integrated engineered systems and components that constitute the final facility, and

- the practicality and overall effectiveness of the layered protection barriers utilized at the facility for HSE loss prevention and control.

Through the verification scheme the MEEI can trouble shoot projects and associated works to identify and determine potential problems or concerns so that they can be addressed or resolved before a facility can be permitted to commence intended operations.

In the final analysis, the outcome of the verification scheme, apart from facilitating meaningful regulatory interface with projects, will serve to validate that the facility was built properly to meet anticipated demands, comply with approved standards and best practices available at the time of the evaluation. This in itself provides the State with accountability that the MEEI did its best possible to ensure the acceptability of the final facility and assist project undertaker to demonstrate that due diligence was followed by the developer.

8.0 PURPOSE OF CVA

In confirming the overall integrity, adequacy or ability of facility to comply with the stated and anticipated baseline HSE performance capabilities, specialized skill sets and competencies may be required which may not be resident in the Ministry and which may have to be outsourced as part of the regulatory administrative charges for a project.

Whenever the MEEI deems that a specialist or expert opinion is required to assist the Ministry in achieving its verification objective(s), then the owner(s) or operator of the facility, herein after termed the “duty holder”, will be instructed by the Ministry on the need to secure the services of a recognized, independent and competent entity for third party verification assignments.

Organizations who can provide the expert opinion or specialist services required by the MEEI are categorized as *Verification Agents*.

A nominated verification entity who becomes sanctioned or authorized by the Ministry as its agent to vet a project or assignment for approval purposes is designated the title “**Certified Verification Agent (CVA)**”.

The Certified Verification Agent (CVA) shall act on behalf of the Ministry as an agent to undertake verification work activities as prescribed by the MEEI’s Verification Guidelines for establishing technical assurances.

The CVA is primarily responsible for trouble shooting projects to identify flaws, shortcomings, unacceptable practices and other matters of concerns associated with the project under review.

9.0 CERTIFICATION OF VERIFICATION AGENTS

It must be noted that the title of being “*Certified*” is normally conferred only when a verification agent is authorized to act as an agent for the MEEI on a specific assignment.

This title is not extendible to assignments outside the jurisdiction of the MEEI or to periods when there are no verification assignments.

Once assigned this title, it is not to be misconstrued or misinterpreted as infinite, because the title may last only as long as the assurance process on a specific assignment.

Once a verification agent is conferred the status of being a *certified*, the verification agents will be required to maintaining the designation by upholding the “Criteria for Eligibility” (See below) which will be validated through audits conducted by the MEEI as required.

10.0 CRITERIA FOR ELIGIBILITY

Eligibility of verification agents desirous of practicing in the Republic of Trinidad and Tobago will be governed by the following minimum requirements:

1. Working knowledge of MEEI Regulatory Framework

In ensuring that verification assignments are executed as intended, the MEEI will monitor and evaluate work performed by verification agents on a regular basis. In promoting a meaningful interface in the monitoring and evaluation process, it has been recognized that verification agents must have a proper working knowledge of MEEI’s regulatory framework and requirements.

Being able to demonstrate a working knowledge of MEEI regulatory framework will become enforceable in fiscal year 2006 and onwards.

In demonstrating the proper indoctrination and work knowledge of MEEI regulatory framework, verification agents will be given the option of having:

- Verification personnel directly trained on MEEI’s regulatory framework and requirements, or
- Recourse to *Regulatory Advisors* who have been certified by the MEEI to disseminate information on MEEI’s regulatory framework and requirements.

Certification on MEEI’s regulatory framework and requirements can be attained either through the MEEI or competent training instructors recognized by the MEEI.

2. Local Content

As the start of 2006 and onwards, all verification assignments will be subject to Government's directive aimed at facilitating the development of Local Content on projects and assignments in the energy sector.

Local content as it pertains to verification assignments will entail hiring a percentage of competent local nationals on assignments, having a local office and manager, providing a liaison officer per assignment to act as point of contact for interfacing with MEEI.

The objectives of local content as it relates to verification assignments shall be to:

- Facilitate the transfer of technical expertise for the development and elevation of the HSE discipline and profession in Trinidad and Tobago.
- Ensure adequate provisions are available locally for promoting a proper interface between the MEEI and the verification agent.
- Promote technology transfer to tertiary institutions, regulatory agencies and parties of interest such as NGO's, etc.

3. Verification Abilities

The success of the Verification Scheme relies heavily on utilizing the services of competent personnel to provide expert opinion. Competence of verification personnel is a function of experience, qualifications and proper working knowledge of verification systems and tools utilized by the verification agent.

Utilizing under-qualified or inexperienced officers to provide expert opinion will not be permitted in MEEI verification assignments.

Eligibility in this area will require proof of competent human resources with adequate capabilities to handle verification assignments is a mandatory, which shall be demonstrated by but not limited to the following:

- Statement on available technical expertise and specialized skill sets
- Profile or history of experiences in previous verification assignments (must be similar to the type of assignment being tendered for)
- Familiarity and working knowledge of industry accepted engineering tools such as modern versions of software and simulation tools, codes and standards, etc.
- Familiarity with problems they have affected the industry and working knowledge of lesson learned from international experiences.

4. Financial Security:

Being financially secure and stable is another desirous quality and the purpose behind this is to ensure that the assigned verification agent does not fold and leave the MEEI's verification assignments stranded or incomplete.

If agents cannot provide the requisite proof in this area, then a bond equivalent to the cost of the verification assignment will have to be posted prior to a project, which can be reclaimed at the completion stage. The MEEI reserves the right to utilize this bond to complete any verification assignment that is left in an incomplete state.

5. Liability Coverage:

Although verification agents will not be responsible for developing the facility, they must be mindful that their opinions or judgments on projects, could lead to change(s) in the proponent's original project plan(s) and if the forthcoming change(s) is/are associated with any root cause(s) of a loss related incident then the possibility may exist for litigation.

It must be noted that proof of liability coverage is therefore a necessary requisite because the MEEI or State will not be responsible for covering any fines or penalties imposed on verification agents from litigation proceedings.

6. Progressiveness

The MEEI recognizes that technology, standards and the industrial environment are continuously changing with time and hence verification agents must be familiar with the changes or advancements if they are to provide a proper judgment on projects.

It must be noted that the MEEI will not accept the explanation or excuse provided by a verification agent of not being familiar or trained in a specific area for assessment works on a verification assignment.

Hence, verification agents must also be able to demonstrate their progressiveness by having development and continuous improvement programmes planned and instituted to maintain, update and improve the competency of its verification personnel.

7. Independence

Verification agents are required to provide information that will guide the decision of the MEEI on whether or not to permit a facility to operate. Hence, independence is a key and essential requisite for eligibility as a verification agent.

Outside of official assignments, it is recognized that verification agents will be at liberty to outsource their technical expertise or advisory services to energy-based clientele as part of their business strategy. These non-regulatory assignments can foster relationships with duty holders that have the potential to bring the independence of the MEEI verification assignments into question. As a result, verification agents must be able to uphold their independence on MEEI's verification assignments and ensure that any other business conducted with the energy-based clientele does not in any way compromise the verification services offered to the MEEI.

In dealing with the above concern, verification agents will be required to state the nature of other non-regulatory assignments being performed for the duty holder.

On a matter of special interest, engineering based organization that provide services ranging from design, procurement and construction of the facilities will not be accepted as verification agents due to conflict of interest that could arise in balancing their roles.

8. Work Ethics and Integrity

Verification agents must be able to demonstrate how codes of conduct or integrity of verification officers will be managed and controlled.

In pursuing verification assignments, verification officers may be required to review proprietary information on certain projects or technologies and hence must be willing to uphold confidentiality agreement.

Knowing how to interface with duty holder, other regulatory authorities and the public is of critical importance.

9. Quality of Work

In making every effort to select the best verification agents for MEEI verification assignments, the MEEI is very mindful about engaging the services of a verification agent with a questionable performance history or track record.

In crosschecking this matter, it is recognized the quality of work or service delivered on previous verification type assignments, local and international, must be substantiated.

In facilitating this objective, verification agents will be required to forward and maintain a log of all certificates or letters of reference from the clients of previous verification type assignments for evaluation.

If the source of the reference is a client or agency other than MEEI that outsourced the verification services, then the certificate or letter of reference must have a

statement rating the overall performance of the verification agent and value added to the specific assignment. The letters of reference must also have information to contact the person(s) or department(s) of the client or agency issuing the statement if further clarification is required.

With respect to verification assignments in the local energy sector where the client is the MEEI, the files on projects at the HSE/Measurement Division will be the source of reference.

10. Verification Systems

Verification agents must be able to demonstrate that they know what they have to do or look for in a verification assignment.

The MEEI has given official recognition to the world's first set of publicly accessible verification standards produced by Det Norske Veritas (DNV).

Competing verification agents may choose to utilize these standards, however, if a verification agent has an internal verification system that is proprietary to their organization that they chose to utilize, then it must be demonstrated that their internal verification system are equivalent or better to the DNV verification performance standards utilized by the MEEI.

11. Data Management

It must be noted that the verification process does not end with the completion of a verification assignment but actually transcend the life of the facility or its period of existence. As a result, the MEEI requires verification agents to have the capacity to maintain, manage and share data associated with the verification assignment.

Maintaining archives of files, records, results of processed data and the work done on each verification assignment for future reference by MEEI is of utmost importance.

Data associated with verification assignment must be backed up and be available in Trinidad to facilitate any investigative or intervention matter the MEEI wishes to pursue.

11.0 SELECTION PROCESS

The process of securing the services of a verification agent starts when the Ministry makes an official pronouncement on whether a CVA is required for a specific project

that falls under the five categories of the Ministry's Approval Regime. Once this determination is made, then the next step is to proceed with the selection of the CVA.

It must be noted that the CVA works for the MEEI and hence the MEEI is ultimately responsible for determining which verification agent is selected. However, noting that the bureaucratic processes associated with making necessary arrangements may be lengthy with the potential of causing delays to project schedule, duty holders are given the option of managing the selection process and handling the financial arrangements for the CVA's expenditure.

If a duty holder undertakes the selection process, the duty holder must also adhere to the MEEI's eligibility criteria as a minimum guideline. Duty holders may also have internal business models for managing contracts, which may be applied to the selection process.

Two business models are formally recognized by the MEEI for allowing the duty holder to manage the selection process, which are as follows:

Model 1: In this business model the duty holder advertises locally and internationally for a verification agent who has the necessary experience and expertise to perform the required verification task. Applicants are screened and prospective candidates short-listed to acquire the top potential candidates.

Model 2: In facilitating optimization of administrative resources, some duty holders may opt to pursue a business model that pre-establishes a short listing of preferred verification agents who can be called upon at moments notice as projects arises. This approach will be accepted by the MEEI, however, in maintaining the listing of preferred verification agents, the duty holders must uphold the principles of a free and unbiased market and give due consideration to other verification entities who desire to enter the verification arena.

Other business models will be considered by the MEEI as long as it conforms to the principles established in the Guidance Document and promotes an unbiased and free market.

The duty holder must also reveal any terms and conditions that were laid forth as part of their tendering requirement that carry the potential to affect or compromise the independence of the verification process.

In the selection process, the top grouping of most likely candidates for CVA are selected and submitted to the MEEI to facilitate the authorization process. Out of these will be a preferred candidate and reason(s) for recommending the preferred verification agent over the other prospective candidates must be justified and documented.

In concluding the selection process, the duty holder will forward the relevant information (as listed below) on the recommended and preferred verification agent for the verification assignment to the MEEI for consideration and authorization.

12.0 AUTHORIZATION PROCESS

In making the final ruling on whether the recommended verification agent becomes authorized by the MEEI as a Certified Verification Agent (CVA), the following information must be acquired:

- Name of the verification agent.
- Structure of the verification agent (stand alone entity or alliance).
- Addresses and contacts of Local and Foreign offices.
- Name and contact of local manager and liaison representative(s).
- Proof that the recommended verification agent has a proper working knowledge of the MEEI's Regulatory Framework.
- Statement on verification agent's capabilities, skill and areas of expertise.
- Statement on verification agent's Local Content Development Plan.
- Proof of adequate liability coverage and its acceptability to the duty holder.
- Confirmation by duty holder on financial viability of verification agent.
- Chronology of previous verification type work undertaken.
- References from former clients on the quality of work performed.
- Chronology of training undertaken and planned to maintain, update and improve the competency of verification personnel assigned to projects.
- Outline of technical human resources to be assigned on the specified assignment: outlining their qualifications, experiences, skills and capabilities for vetting of the different development phases or aspects of the facility.
- Description of applicable tools and technical resources to be used in achieving verification assurances e.g. type and version on modeling software, codes and standards to be cross referenced, etc.
- Statement on verification agent's data management system.
- Statement on any private or non-regulatory type assignment being planned or concurrently performed for duty holder that also requires the services of the nominated verification agent
- Statement of acknowledgement from duty holder that the recommended verification entity has no other vested interest in the project.

After submission of the above information, a review period of 20 working days will be required following which the Ministry will notify the duty holder on its final position as to whether the nominated verification agent will be authorized as the CVA for the specified verification assignment.

It must be noted that it is not the intend of the MEEI to allow one verification agent to dominate the market which could leave the MEEI's Approval Regime vulnerable if that dominant agent decided to discontinue verifications services in Trinidad and Tobago.

Hence, promoting *verification capacity* to ensure availability of alternative verification agents is an important factor for consideration in the authorizing process.

Assessing the number of assignments and the how they are distributed are important factors for consideration in promoting sustainability of the verification market in Trinidad and Tobago.

In authorizing a verification agent as a CVA, the Ministry reserves the right to veto the rationale of lowest bidder as the overriding criteria and enforce the right to build and maintain verification capacity or availability of alternative verification expertise in the local energy sector.

Also, the MEEI recognizes that the market has a limit to the amount of verification agents that it can viably support. Hence, in pronouncing on assignments, the MEEI reserve to right to give extra credit to the first set of agents that made a commitment to establish a local presence in preference to new verification agents who are trying to enter the market.

13.0 INITIATING A VERIFICATION ASSIGNMENT

Each CVA must note that having been authorized by MEEI, it does not mean that the CVA has automatic clearance to proceed with the verifications assignment.

Specific requirements that must be fulfilled before the MEEI can grant the permission to initiate a verification assignment are as follows:

1. Verification Plan

Prior to commencing a verification assignment, a *verification plan* (discussed further below) must be established that shall serve as the basis for benchmarking and crosschecking the verification assignment.

The CVA will be required to prepare a draft *verification plan*, which shall be submitted to the MEEI and the duty holder to review and comment on. These three parties must discuss any forthcoming recommendations with intent on incorporation into final version.

Upon reaching a consensus agreement on the amendments, the amended version of the verification plan is prepared for MEEI to sanction as the *official verification plan* for the verification assignment.

In must be note that it is only after the MEEI has sanctioned the official verification plan can the CVA then proceed with the verification assignment.

Sanctioning the verification plan will be limited to a period of 30 working days from date of submission of the draft. If there are issues which cannot be resolved or which the CVA cannot facilitate (due to lack of resources, etc.), then the MEEI reserve the right to reconsider the appointment of the authorized verification agent and request that the duty holder call upon the other verification agents who were short listed for the intended assignment.

If no queries are received on the draft within the stipulated period, then upon the expiration of the review period, the draft verification plan will be deemed the official verification plan for execution of the CVA duties.

2. Local Content Development Plan

Until verification capabilities are properly entrenched in Trinidad and Tobago, foreign verification agents will be subjected to a provisional requirement to present a Local Content Development Plan (LCDP).

Verification agents will have to present the LCDP as a holistic approach to show what level of technical verification capabilities they plan to develop and establish locally, and indicate how local content arrangements for each verification assignment fits into the overall plan.

The MEEI will have to be reviewed and sanction the local content arrangement for each verification assignment to ensure that delivers on expectations of LCDP.

14.0 VERIFICATION PLAN

The *Verification Plan* is a tool for managing the inputs and outputs from the verification process and guides the preparation and disbursement of funding to cover CVA's expenditure and services provided.

It is fundamentally goal setting in nature and focuses on trying to achieve assurances on set targets or outputs called *assurance deliverables*. The inputs and path chosen for establishing assurances are not dictated by MEEI but left up to the expert judgment of the CVA, as long as it meets the MEEI expectations of complying with best industry practices.

It is more that the standard *Scope of Works* and has a unique distinguishing characteristic of not being limited by prescriptive requirements of the client, who under a scope makes final judgment what has to be done. The verification plan thus also allows for subsequent HSE matters to be dealt with, as unanticipated challenges emerge during a verification assignment, which were not initially considered.

By utilizing the Verification Plan approach; the MEEI eliminates the problem of a CVA declining or not being obligated as per contract to undertake any other additional

verification activity that may be required later in project, which was not initially specified.

In the Verification Plan approach, the CVA will be required to outline the assurance deliverables per development phase of a project for demonstrating to the Ministry how the overall work plan will be structured. If an assurance deliverable cannot be established, then the CVA must indicate so and advise the MEEI on its final judgment for approving the facility.

The assurance deliverables of each Verification Plan may vary from project to project, based on challenges that may be unique to projects. However, the final objective will be the same to reassure everyone that the facility is capable of operating in a safe, health conscious and environmentally responsible manner.

Note, for public scrutiny, the verification plan will serve as proof of the efforts made by the State in assessing the acceptability of the platform prior to use. Hence, the finalized Verification Plan will have to acquire official acknowledgement from the Ministry before any clearance can be given for the CVA to pursue the verification assignment.

a) Components of a Verification Plan

Components of a typical Verification Plan shall be as per minimum:

- i. Element of Verification Process – Phases or aspects of the project to be verified.
- ii. Matters to be appraised – Topics, themes or areas that are to be examined based on concerns or known problems.
- iii. Verification Activities – Description of assessment methodologies, type of examinations, surveys, monitoring and checks to be performed.
- iv. Level of Involvement – Description of how the CVA will prioritize its resources and time to pursue verification activities as per ranking process in DNV Risk Based Verification Standard.
- v. Assurance Deliverables – Expected outcomes from verification examinations.

b) General Rules

The Verification Plan must show logic and connectivity between the different phases of a project and shall be presented in a format for accountability under public scrutiny and due diligence defense should queries arise.

In getting a Verification Plan accepted, a draft must first be prepared which will be subsequently revised and finalized based on feedback and consensus agreement with the CVA, Ministry and the duty holder.

In aiding the interpretation of the Verification Plan other pertinent information should be affixed, which can include but not limited to, scheduling program for checks or

surveys, sources of information, types of verification methodologies available versus that chosen or preferred, etc.

The CVA's level of involvement, which will be a function of the frequency of surveys, shall be adequate to provide sufficient interaction to guide their decision making process. Where continuous presence for verification checks or surveys is required at certain critical stages (e.g. installation of platform), the CVA shall be obligated to ensure the presence of adequate verification personnel.

15.0 GENERAL DESCRIPTION OF CVA'S ROLE

The roles of the CVA as it pertains to matters requiring evaluation and validation as per agreed Verification Plan for project under review shall be guided by the following:

General Obligations:

- a) The CVA's role in a verification assignment shall be limited to verifying whether the physical facility under review is 'Fit-for-Purpose' unless indicated otherwise.
- b) The CVA's role will be a function of the physical boundaries of the verification assignment that must be established via consensus agreement with the Ministry and duty holder prior to engagement of services.
- c) In guiding the preparation and execution of the Verification Plan governing the CVA role, it is recognized that changes or unanticipated challenges may emerge during a project, which could alter the original Verification Plan. If such an event does manifest, the CVA will be obligated to adjust the verification programme to ensure that additional matters are captured.
- d) The CVA will be required to act on matters raised by the Ministry during execution of the project that were not part of the original Verification Plan.
- e) The CVA shall review, scrutinize and monitor the various elements of project phases and related work activities, as per Verification Plan, that went into the development of the intended facility so as to ensure that each stated assurance deliverables are being satisfied.
- f) The CVA shall be guided by the MEEI's Technical Guidance Documents, verifications standards and other pertinent references. If the CVA has its own internal verification system that will be utilized on a verification assignment, then the MEEI must pronounce on the acceptability of the system prior to use.
- g) The CVA will be obligated to follow up on instructions issued by the Ministry of Energy and Energy Industries and report back on same.

- h) The CVA shall be responsible for preparing ‘Verification Reports’ per aspect of project evaluated which should contain adequate information on steps taken in achieving assurance deliverables.
- i) The CVA shall be obligated to meet with MEEI to review the project under evaluation and present interim and final verification reports upon completion.
- j) At the end of the verification process, the CVA shall advise the Ministry as to whether or not the evaluated facility is accepted for use or “Fit-for-Purpose”.
- k) In order to ensure that the facility will comply with its stated purpose, the CVA must be prepared to work concurrently with the Ministry, Contractors and duty holder in the identification of any discrepancies, deviations, flaws, damages or unacceptable conditions and provide advise on appropriateness of action(s) to correct and accept repair works.

Limitations:

1. Unless requested by MEEI, verification of mitigating environmental provisions utilized during construction, as dictated by commitments made in EIA report and Certificate of Environmental Clearance (CEC) requirements, that form an integral part in the development of the facility but not an attribute of final facility, will fall under the purview of the MEEI and not the CVA.

The CVA will however be responsible for ensuring that these provisions do not impact on or defeat the overall integrity of the facility through out its service life.

2. The verification of the facility’s measurement equipment will relate only to HSE risk emanating from such equipment. Verifying accuracy or performance capabilities of measurement equipment will not be part of the CVA duties.

16.0 REPORTING RESPONSIBILITIES

Reporting interface with the MEEI includes but not limited to the following:

1. Prior to the start of the verification process the CVA shall meet with the Ministry to clarify any issue(s) related to the assignment and formalization of the Verification Plan.
2. On completion of a specific verification phase as outlined within in this document, the CVA shall submit a Verification Report to the Ministry, followed by a presentation on same report. If matters should arise during a verification phase that requires the MEEI urgent attention, for example: remedial works on damages or

defects, the CVA shall notify the Ministry immediately upon detection or occurrence.

3. During the construction phase, the MEEI may wish to audit the progress of the verification process and participate in verification surveys. In facilitating this activity, the CVA shall be responsible for keeping the Ministry informed in advance of planned surveys.
4. The Ministry will allow some flexibility for submission of combined verification report for certain interrelated phases of a Project e.g. Planning and Design. If the CVA wishes to pursue this option then they must advise the Ministry accordingly.
5. Execution of the subsequent phase of a project will not be permitted by the MEEI unless the CVA has required assurances from the duty holder that preceding phase of project has been completed to satisfaction e.g. Procurement/Construction should not commence unless Planning and Design verification are completed. If the duty holder request a waiver on this requirement, then the CVA must meet with the MEEI and advise accordingly.
6. The CVA must be prepared to meet with the MEEI on a frequent basis to review information and keep the MEEI continuously updated on urgent matters.

17.0 VERIFICATION PROGRAMME

In pursuing a verification assignment as per the agreed Verification Plan, the CVA must have to have a structured programme for delivering required assurances, which is termed a *Verification Programme*.

Described below are samples of what a typical verification programme should cover.

a) Planning Verification

Based on the Ministry's experiences, planning is the area that has been most problematic on projects and may be considered the weakest link in the development process of new facilities.

Planning is a critical stage in the development process of a facility that guide all other phases of the project. Failure to get the inputs correct mean that certain inherent risks or deficiencies would be carried into the subsequent phases of a facility life cycle and by the time the problem is detected, it may be difficult or costly to rectify. In some cases, addressing the problem may be cost prohibitive with no other choice but to leave the issue alone and learn to adapt.

CVA will be required to check for planning oversights through the review of FEED studies, baseline data collected and other pertinent reports that guided the selection and location of site, choice of processing technologies, equipment capacity sizing and inventories, etc.

b) Design Verification

In the design phase, knowing whether the final approved for construction designs is acceptable, workable and complete are of importance to the MEEI.

The CVA will have to assess the structural and P&ID drawings, flow diagrams and engineering analyses, HAZOP studies, etc that went into the determination of electrical classification, equipment power loads, wall thickness of pipe works, sizing and arrangement of process components, distributions of loads, layout and configuration of ESD on the facility, etc.

In vetting this phase, the CVA shall be guided by appropriate codes and standards, as well as lessons learned from past experiences.

c) Manufacturing and Procurement Verification

Arising from the design will be listing of equipment and materials for procurements to build the physical facility. It is the MEEI intent to ensure that product with the highest quality and damage free status are utilized on projects.

The CVA will have to assess whether the manufacturing process to produce the required equipment and materials are acceptable to deliver highest quality of product. The manner in which equipment and material are handled, stored and transshipped must also be assessed to ensure that no damages are sustained.

d) Construction Verification

It is the MEEI intent to ensure that facilities are completed to agreed plans with equipment and civil structures being properly located, aligned and free from weld defects or loose connections.

In undertaking this phase, the CVA shall perform frequent checks and surveys during the verification assignment.

The CVA shall also be responsible for verifying that appropriate quality control/quality assurances are prepared and followed for integration of building components and equipment. New technologies or changes to standard construction practices that may be employed must be appropriately analyzed.

e) **Commissioning Verification**

In the commissioning phase of a project, it is the MEEI intent to ensure that a facility is capable of performing as intended.

The CVA will be required to witness and assess the function testing and close-out checks on each equipment to ensure that the stated functional purpose are being met.

Commissioning may also entail monitoring the break-in or test phase of the facility prior to handover to operator. Matters of interest in this phase will be to ensure that computer control software, sensors and instrumentation, ESD, detection devices and alarms are properly functional.

18.0 VERIFICATION REPORTS

The manner in which verification reports are prepared and presented is given particular emphasis by the MEEI because of the fact that the reports are legal documents for demonstrating whether a facility has the required assurances as well as records for future references for any investigation or litigation matters that may arise.

The CVA will be responsible for preparing verification reports to document what was done and present the end results of their efforts. If reports are not presented in an acceptable manner, then the MEEI will reserve the right to request the CVA to resubmit at no charge to the State.

A presentation must also be made on each verification report agreed to, whether for individual project phase or combined phases, and the CVA must have appropriately trained personnel to perform this task of outlining or presenting the work performed.

The CVA will be responsible for making arrangement for each presentation i.e. date, time, venue, etc. The audience for the presentation will be determined by the MEEI and may include other regulatory bodies.

The MEEI will not accept any casual dialogue, padding of reports or poorly prepared reports whenever submissions are made. Rather the Verification report should contain adequate information and the presentation should be streamed line with the contents of the report.

Verification Reports per phase of project shall contain as per minimum the following:

1. Executive Summary
2. Statement on Assurances
3. Description of Verification Programme
4. Assumptions and Limitations

5. Methodologies employed for each Verification task
6. Matters Appraised
7. Issues or concerns identified
8. Acceptability of duty holder's response in contesting issues raised
9. Referenced Codes and Standards
10. Appendices – Drawings, Photos, Sample Calculations, etc

Unless informed otherwise, the CVA will be required to prepare and submit a minimum amount of verification reports to the MEEI. This will usually be two hard copy and two electronic versions.

Verification report for a particular assignment must be stored at the local office of the Verification agent for future reference.

19.0 RULING ON MATTERS OF SPECIAL INTEREST

It is recognized that matters of special interest could arise that does not fit the general rule on the Role of the Verification Agent and hence clarification may be required from MEEI and are as follows:

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| Breaches: | At no time will any of the eligibility criteria be violated. |
| Confidentiality: | Making any press releases on projects without MEEI authorization is prohibited. |
| Resources: | <p>Verification agents desirous of practicing in the local energy sector must have all of the resources necessary to cover the different phases or aspect of the project to be reviewed, so as to ensure:</p> <ul style="list-style-type: none"> • thoroughness in evaluation exercises. • proper connectivity and proper communication of concerns identified between stages of the verification process. |

In avoiding the contentious issue of verification agents losing technical personnel after initiation of a project, verification agents will be required to have written agreements that bind the contracted technical experts for the duration of the project.

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| Alliances: | If for some reason a bidding verification agent is not equipped to handle all of the phases or aspects of a project and an alliance with another verification agent is required, then due |
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representation for an alliance with other competent agent(s) may be made to the MEEI for consideration.

In such a case the primary agent must be stated and this agent will be responsible for the work performed by the other supporting agents in the verification assignment. Acceptance of the alliances will be left to the discretion of the MEEI.

Verification Officers: Technical experts employed by a verification agent to perform the prescribed verification duties shall be appropriately registered (in their profession) and possess the necessary competence demonstrated by appropriate qualifications, experiences and capabilities. These persons shall have no other vested involvement or interest in the project other than to perform the required verification duties.

These persons shall have no professional, ethical or litigation matters pending before them that could compromise their expert judgment.

Trainees: A confirmed CVA will be allowed the liberty of having personnel trained on the verification assignment; however, the professional opinions of trainee(s) will not be permitted as part of the final judgment for technical assurance.

Office location: The interface and frequency of meeting between CVA and MEEI is a crucial aspect of any verification assignment. This has been an area of concern noted in former assignments, which the MEEI seeks to rectify. Hence, in ruling on this matter, the MEEI request that the office of the CVA be located in close proximity to the Division of MEEI that is responsible for Health, Safety and the Environment.

Investigations: If for some reason the advice provided by a CVA results in a HSE loss related event at a verified facility, then that CVA must make available verification officers who worked on the project together with all relevant documents and records to assist the State in investigative proceedings.

Liability coverage: Each assignment accepted must have adequate liability coverage, which must be acknowledged by both the duty holder and the Ministry prior to being accepted for verification assignment. Sharing or distributing single liability coverage among different projects will not be accepted.

20.0 OTHER MATTERS

1) ARBITRATION

The CVA in execution of its duties will have to inform the duty holder of concerns, problems, oversights, etc associated with the project under review. The duty holder may choose to contest the CVA opinion(s) or recommendation(s) on matters of specific interest, which must be justified accordingly. If a resolution cannot be reached in such a case then the matter in contention will have to be referred to the Ministry for final arbitration.

The Ministry reserves the right as the Regulatory Authority to determine which recommended course of action should be pursued by duty holder.

2) FINANCING ARRANGEMENTS

The administrative cost of the MEEI to regulate the Oil and Gas Sector are recovered under the Petroleum Impost or Production Sharing Contract (PSC), which is in essence a charge to duty holders.

The outsourcing of external expertise to assist the Ministry in its regulatory obligation is considered an extension of the Ministry's services and hence is also chargeable under the stated provision of Petroleum Regulation 77 which covers "Other Payments".

Petroleum Regulation 77 states "Licensees shall pay current charges and any services rendered by the Government or statutory authorities"

In avoiding delays to projects due to bureaucracies in processing the release of finances, the MEEI gives licensees or duty holders the option to make internal arrangements for handling the financial arrangements for securing the services of the CVA. However, even though the duty holder may pay up front to secure the services of the CVA, one must remember that it is a regulatory administrative charge that is being covered which would have normally been paid by the MEEI and recovered subsequently.

Duty holders with project proposals must allocate necessary financial resources in their project's budget to pay for the services of the CVA. Note, payments for CVA services will be guided by the "level of involvement" as per Verification Plan.

If the State has to make the financial and administrative arrangements for outsourcing the services of a CVA, then duty holders are reminded that in addition to principal amount and accrued interest, a processing and

administration charge would also apply and in such a case, the duty holder will be responsible for repaying the final accrued cost. Also note, if State funding cannot be assessed in a timely manner, the MEEI has the option to secure the financing of a CVA from a local bank or financial lending institution and the duty holder will be responsible for repayment of the borrowed sum including interest charged, legal processing fees and other requirements of the financial institution.

Once financial arrangements are in place, the Verification Plan shall guide the disbursement of funding for engagement of CVA services per phases of verification assignment.

21.0 REFERENCES

Other MEEI Technical Guidance Documents that constitute the Approval Regime:

- 1) Guide to MEEI's Approval Regime, GD 01
- 2) Verification Scheme - Offshore Structural Platforms, GD 03
- 3) Verification Scheme - Pipelines, GD 04
- 4) Verification Scheme - Hydrocarbon Production and Processing Facilities, GD 05

Recognized verification standards that supports the MEEI's Verification Scheme:

- 1) Det Norske Veritas (DNV) Offshore Service Specification: DNV-OSS-300, Risk Based Verification
- 2) Det Norske Veritas (DNV) Offshore Standard: DNV-OSS-E201, Hydrocarbon Production Plant, October 2000
- 3) Det Norske Veritas (DNV) Offshore Standard: DNV-OSS-301, Certification and Verification of Pipelines, October 2000
- 4) Det Norske Veritas (DNV) Offshore Standard: DNV-OSS-307, Verification of Process Facilities, June 2004
- 5) Det Norske Veritas (DNV) Offshore Standard: DNV-OSS-306, Verification of Subsea Facilities, 2004
- 6) Det Norske Veritas (DNV) Offshore Standard: DNV-OSS-E201, Verification, Certification and Classification of Gas Export and Receiving Terminals

22.0 QUERIES

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

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23.0 ENFORCEMENT

Version: 001.final

Dated: July 2006

The revision to the Verification Scheme takes legal effect for fiscal year 2006 superseding previous version and is applicable to all energy-based establishments under the jurisdiction of the MEEI.

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