



HSE Management System Manual



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INTRODUCTION

- The items within this introduction section are meant to provide an overview of an HSE MS and are not considered requirements and therefore shall not be auditable.

BACKGROUND

- Fundamentally, organizations are responsible for the health and safety of workers and others, and the sustainability and protection of the environment.. The adoption of this HSE MS will provide safe and healthy workplaces, prevent work-related injury and ill health and continually improve HSE performance.

AIM

- This NOV HSE MS provides our organization with a framework for managing HSE risks and opportunities for protecting people and the environment and responding to changing conditions in balance with socio-economic needs. It specifies requirements that will enable our organization to achieve the intended outcomes we have set for the HSE MS.
- The intended outcomes of the HSE MS are to prevent work-related injury and ill health people, protect the environment, and provide safe and healthy workplaces. Consequently, it is critically important that the location eliminate hazards and minimize HSE risks by taking preventive and protective measures.
- Implementing this HSE MS enables a location to manage its HSE risks, improve its HSE performance, and assist with the fulfillment of legal, compliance, and other requirements.

SUCCESS FACTORS

- This HSE MS enables NOV Top Management to effectively address HSE risks and opportunities by integrating HSE management into business processes, strategic direction and decision making, aligning them with other business priorities, and incorporating HSE governance into its overall management system.
- The implementation of this HSE MS is a strategic and operational decision for our organization. The success of this HSE MS depends on leadership, commitment and participation from all levels and functions of the organization.
- The implementation and maintenance of this HSE MS, its effectiveness and its ability to achieve its intended outcomes are dependent on key factors such as:
 - Top management leadership, commitment, responsibilities and accountability;
 - Top management developing, leading and promoting a culture in the organization that supports the intended outcomes of the HSE management system;
 - Communication;
 - Consultation and participation of workers, and, where they exist, workers' representatives;
 - Allocation of the necessary resources to maintain it;
 - HSE policies, which are compatible with the overall strategic objectives and direction of the organization;
 - Effective process(es) for identifying hazards, controlling HSE risks and taking advantage of HSE opportunities;
 - Continual performance evaluation and monitoring of the HSE management system to improve OH&S performance;
 - Integration of the OH&S management system into the organization's business processes;
 - Compliance with legal and other requirements; and,
 - HSE objectives that align with the HSE policy and consider the organization's hazards, HSE risks and HSE opportunities.

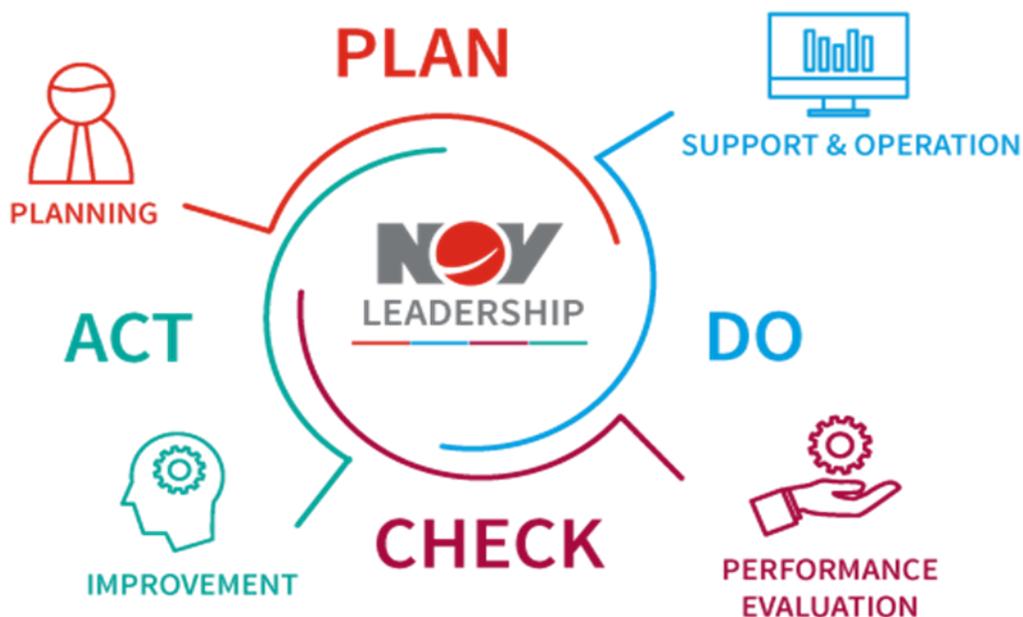
PLAN-DO-CHECK-ACT

- The NOV HSE MS is structured under the Plan-Do-Check-Act ("PDCA") model which is based upon international standards, including ISO 14001 and ISO 45001. The PDCA is a process that is repeated to achieve continual improvement. It can be briefly described as follows.

- **Plan:** determine and assess risks and opportunities, establish HSE objectives and processes necessary to deliver results in accordance with NOV HSE Policy.
- **Do:** implement the processes as planned.
- **Check:** monitor and measure processes and activities against the NOV HSE Policy, including its commitments, HSE objectives and operating criteria, and report the results.
- **Act:** take actions to continually improve HSE performance to achieve the intended outcomes.

Plan-Do-Check-Act Model

NOV Health, Safety, Environmental Management System



CLARIFICATION AND GUIDANCE

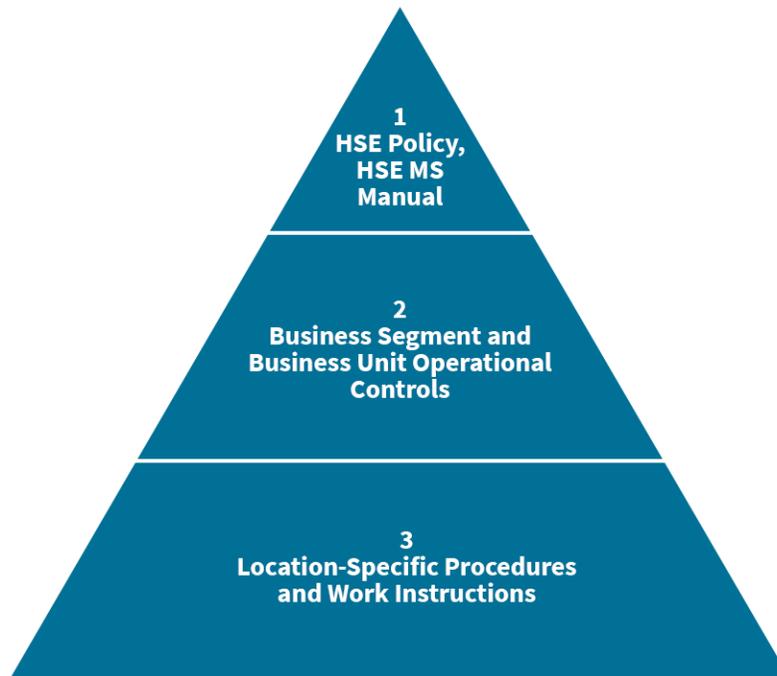
- Within this document the use of “Business Segment (SEG), Business Unit (BU), and / or Location (LOC)” and “Top Management” are used when describing responsibility for establishing, implementing, and maintaining. Where the former is used it is expected the latter is responsible for the establishing, implementing, and maintaining processes.
- In addition to the terms and definitions given in section 3, clarification of the selected concepts below is provided as an aid to prevent misunderstanding.
- In this health, safety, environmental management system, the use of the word “any” implies selection or choice.
- The words “appropriate” and “applicable” are not interchangeable. “Appropriate” means suitable for or to, and implies some degree of freedom, while “applicable” means relevant or possible to apply and implies that if it can be done, it needs to be done.
- The word “consider” means it is necessary to think about the topic, but it can be excluded; whereas “take into account” means it is necessary to think about the topic, but it cannot be excluded.
- “Continual” indicates duration that occurs over a period, but with intervals of interruption (unlike “continuous” which indicates duration without interruption). “Continual” is therefore the appropriate word to use when referring to improvement.
- In this HSE MS, the word “effect” is used to describe the result of a change to the organization. The phrase “environmental impact” refers specifically to the result of a change to the environment, whether positive or negative.

- The word “ensure” means the responsibility can be delegated, but the accountability cannot be delegated.
- The term “interested party” and the term “stakeholder” is a synonym as it represents the same concept.
- The phrase “compliance obligations” replaces and does not differ from the phrase “legal requirements and other requirements to which the organization subscribes”. A compliance obligation is a requirement. There are two kinds of compliance obligations: mandatory compliance obligations (which include laws and regulations) and voluntary compliance obligations (which include contractual commitments, community and industry standards, ethical codes of conduct, and good governance guidelines). A voluntary obligation becomes mandatory once you decide to comply with it.
- “Documented information” replaces the words “documentation”, “documents” and “records” used in previous HSE Standards. To distinguish the intent of the generic term “documented information”, this HSE MS uses the phrase “retain documented information as evidence of...” to mean records, and “maintain documented information” to mean documentation other than records. The phrase “as evidence of...” is not a requirement to meet legal evidentiary requirements; its intent is only to indicate objective evidence needs to be retained.
- The phrase “external provider” means an external supplier organization (which includes a contractor) that provides a product or a service.
- The word “determine” implies a discovery process that results in knowledge.
- The phrase “intended outcome” is what the organization intends to achieve by implementing its HSE MS. The minimal intended outcomes include enhancement of HSE performance, fulfilment of compliance obligations and achievement of HSE objectives.
- The phrase “person(s) doing work under its control” includes persons working for the organization and those working on its behalf for which the organization has responsibility (i.e. contractors). It replaces the phrase “persons working for it or on its behalf” and “persons working for or on behalf of the organization” used in older International Standards.
- The verbal form “shall” indicates a requirement.
- The verbal form “should” indicates a recommendation.
- The verbal form “may” indicates a permission.
- The verbal form “can” indicates a possibility or a capability.

1 SCOPE

- 1.1 This HSE MS Manual identifies the framework needed to design an HSE MS and serves as guidance to any SEG, BU or LOC creating an HSE MS. Each SEG, BU, and / or LOC will be responsible to define the scope of their HSE MS, and the design and intent of the HSE MS itself.
- 1.2 This document can be used in whole or in part. However, claims of conformity to this document are not acceptable unless all its requirements are incorporated into the HSE MS implemented by the SEG, BU, and / or LOC and fulfilled without exclusion.
- 1.3 A cross-reference list of the supporting processes correlating to the requirements outlined within this Manual should be created by the SEG, BU, and / or LOC.
- 1.4 This HSE MS manual applies to the OH&S risks under the organization’s control, taking into account factors such as the organization’s operations and the needs and expectations of its workers and other interested parties AND applies to the environmental aspects of its activities, products and services that the organization determines it can either control or influence considering a life cycle perspective. .
- 1.5 This HSE MS does not address issues such as product safety or property damage, beyond the risks to workers and other relevant interested parties.
- 1.6 The framework by which the HSE Management System will model includes:
 - 1.6.1 The HSE Policy Statement and this HSE MS Manual as the foundation of the NOV HSE MS. The HSE Policy Statement and HSE MS Manual are also referred to as “Level 1”.

- 1.6.2 Operational Controls that detail how the SEG or BU aligns their operations with this HSE MS Manual. Operational Controls are referred to as “Level 2”.
- 1.6.3 LOC-Specific Procedures and Work Instructions that detail how each LOC aligns their operations to SEG, BU, regulatory and other requirements. LOC Specific Procedures and Work Instructions are referred to as “Level 3”.



- 1.7 All supporting documents are to be maintained in accordance with this HSE MS as appropriate.
- 1.8 SEG, BU, and/or LOC following this HSE MS shall implement and maintain, either all or in part as allowed per Section 1.2, the following processes and where necessary operational control:
 - 1.8.1 Roles, Responsibilities, and Authorities (Section 5);
 - 1.8.2 Consultation and Participation (Section 5);
 - 1.8.3 Hazard Identification, Risk Assessment, and Controls (Section 6);
 - 1.8.4 Environmental Aspects and Impacts (Section 6);
 - 1.8.5 Legal, Compliance Obligations, and Other Requirements (Section 6);
 - 1.8.6 Objectives and Targets (Section 6);
 - 1.8.7 Competence, Training, and Awareness (Section 7);
 - 1.8.8 Communication (Section 7);
 - 1.8.9 Documented Information (Section 7);
 - 1.8.10 Process Specific Operational Controls (as applicable) (Section 8);
 - 1.8.11 Emergency Preparedness and Response (Section 8);

- 1.8.12 Management of Change (Section 8);
 - 1.8.13 Management of Contractors, Procurement, & Outsourcing (Section 8);
 - 1.8.14 Monitoring, Measurement, Analysis, and Evaluation (Section 9);
 - 1.8.15 Internal Audits and Assessments (Section 9);
 - 1.8.16 Evaluation of Compliance (Section 9);
 - 1.8.17 Management Review (Section 9); and / or,
 - 1.8.18 Incidents, Nonconformity, Corrective and Preventive Action (Section 10).
- 1.9 SEG, BU, or LOC opting to implement Sections of this manual, as allowed per Sub-Section 1.2, shall implement the corresponding process above.

2 REFERENCES

- 2.1 ISO 14001:2015 Environmental management systems
- 2.2 ISO 45001:2018 Occupational health and safety management systems

3 TERMS AND DEFINITIONS

- 3.1 The following terms and definitions apply for the purposes of this HSE MS.
- 3.2 **AUDIT:** A systematic, independent, and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.
- 3.3 **AUDITOR:** A person(s) who conducts an audit and is under the direction of a Lead Auditor.
- 3.4 **AUDITOR, LEAD:** A person qualified to organize and lead others in the methods used to conduct audits, responsible for conducting the evaluation and reporting of audit findings.
- 3.5 **AUTHORITY:** Person given the permission to make changes and updates as it pertains to the HSE MS.
- 3.6 **BUSINESS SEGMENT:** The reporting segments within NOV. Referenced as SEG within this document.
- 3.7 **BUSINESS UNIT:** A division of an NOV Business Segment. Referenced as BU within this document.
- 3.8 **COMPETENCE:** The ability to apply knowledge and skills to achieve intended results.
- 3.9 **COMPLIANCE:** Complying with applicable laws, regulations, standards, and other requirements.
- 3.10 **COMPLIANCE OBLIGATION:** Legal requirements that an organization must comply with and other requirements that an organization must or chooses to comply with.
- 3.11 **CONFORMANCE or CONFORMITY:** Fulfilment of a specified HSE MS requirements.
- 3.12 **CONSULTATION:** Seeking views of interested parties before making a decision.
- 3.13 **CONTINUAL IMPROVEMENT:** Recurring activity to enhance performance.
- 3.14 **CONTRACTOR:** External organization providing services to the organization in accordance with agreed specifications, terms and conditions.
- 3.15 **CORRECTIVE ACTION:** Measures taken to eliminate conditions adverse to the environment and/or health and safety to minimize and prevent the recurrence of those conditions.
- 3.16 **DOCUMENTED INFORMATION:** Any written, electronic, or pictorial information required to be created, controlled, and maintained for the organization to operate including the HSE management system,

requirements (operational controls, procedures, work instructions, etc.), related processes, and objective evidence of results achieved (records).

- 3.17 DOCUMENT AND DATA CONTROL: A process to ensure that documents are distributed, revised, or replaced per a control procedure which assures that the document or manual reflects all current requirements.
- 3.18 EFFECTIVENESS: Extent to which planned activities are realized and planned results achieved.
- 3.19 EMPLOYEE: Personnel on the NOV payroll and under the direct control and influence of the organization.
- 3.20 ENVIRONMENT: Surroundings, extending from within an organization to the global system, in which an organization operates including air, water, land, natural resources, flora, fauna, humans, and their interrelation.
- 3.21 ENVIRONMENTAL ASPECT: Element of an organization's activities, products, or services that can interact with the environment.
- 3.22 ENVIRONMENTAL IMPACT: Any change to the environment, whether adverse or beneficial, wholly, or partially resulting from an organization's activities, products, or services.
- 3.23 FINDING: A requirement of HSE MS not implemented with an acceptable level of reliability (nonconformances or observations) or a process that exceeds the requirements of the HSE MS (strength). Usually found during an audit.
- 3.24 HAZARD: Source, situation, or act with a potential for harm in terms of injury, ill health, damage to property, damage to the workplace environment, or a combination of these.
- 3.25 HSE: Health, Safety, and Environmental.
- 3.26 HSE MANAGEMENT SYSTEM (HSE MS): System of organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the HSE Policy (referred to as HSE MS herein).
- 3.27 HSE OBJECTIVES: HSE goals that an organization sets itself to achieve and is quantified where practical with consistent performance with HSE Policy.
- 3.28 HSE PERFORMANCE: Measurable results of the management of the HSE MS. This includes measurement of the effectiveness of the organization's control of its HSE risks, policy, objectives, and other performance requirements.
- 3.29 HSE POLICY: Framework that defines the goals, targets and objectives, compliance, injury prevention, reduction of hazards and continual improvement. It is a statement by the President of the organization of its intentions and principles in relation to its overall HSE performance and the core of the HSE MS.
- 3.30 HSE TARGET: Detailed performance requirement that is quantified where practical which arises from the HSE objectives. The target(s) need to be set and met to achieve the objective(s).
- 3.31 HSE MS MANUAL: A publication that, when combined with the HSE Policy, is the foundation of the NOV HSE MS. The HSE MS Manual contains the requirements necessary to implement the HSE MS.
- 3.32 INCIDENT: An undesired event or action that resulted in a dropped object, environmental spill/release, fire, injury/illness, motor vehicle incident, pressure release, property damage, security issue, or the use of Stop Work Authority. The term "incident" includes "near-misses" and/or "near-hits".
- 3.33 INJURY / ILLNESS: A work related injury/illness that results in either a non-recordable first aid event or a recordable event such as medical treatment beyond first aid, lost time from work, work restrictions/ transfers, loss of consciousness or death.

- 3.34 **INTERESTED PARTY:** Individual or group, inside or outside of the organization, concerned with, actually or potentially affected or perceive itself to be affected by the HSE performance of an organization. Note: To “perceive itself to be affected” means the perception has been made known to the organization and is necessary to fulfill compliance obligations. Interested parties will include employees and workers either under or not under the direct control of the organization.
- 3.35 **LEGAL AND OTHER REQUIREMENTS:** legal requirements that an organization has to comply with and other requirements that an organization has to or chooses to comply with.
- 3.36 **LIFE CYCLE:** consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal.
- 3.37 **LOCATION (LOC):** Any physical site in which work related activities are performed under the control of the organization. The site can be stand-alone or shared between SEGs/BU or other companies, or on customer property.
- 3.38 **MANAGEMENT REVIEW:** A review of the HSE MS and its effectiveness by management.
- 3.39 **MEASUREMENT:** Process to determine a value.
- 3.40 **MONITORING:** Determining the status of a system, a process, or an activity.
- 3.41 **NONCOMPLIANCE:** Any action that does not comply with applicable laws, regulations, standards or other HSE requirement.
- 3.42 **NONCONFORMANCE:** Any action that is a non-fulfilment of an HSE MS requirement.
- 3.43 **OBJECTIVE EVIDENCE:** Facts that are observed, quantified and/or documented.
- 3.44 **OBSERVATION:** Observance of a condition or behavior by a person (employee or non-employee). Area of the HSE MS not implemented with complete reliability but does not constitute a finding. An observation may include an auditable element that is not contrary to documented requirements but warrants further qualification or improvement.
- 3.45 **OPERATIONAL CONTROL:** A SEG BU, and / or LOC document that specifies or describes the requirements of an activity or process and how it is to be performed to ensure alignment with NOV’s HSE Policy and HSE MS.
- 3.46 **ORGANIZATION:** Company, corporation, firm, enterprise, authority, or institution, which has its own functions and administration. For the purposes of this manual, the organization is defined as NOV.
- 3.47 **OUTSOURCE:** Make an arrangement where an external organization performs part of an organization’s function or process.
- 3.48 **PARTICIPATION:** Involvement with interested parties in decision making.
- 3.49 **PERFORMANCE:** A measurable result. Performance can relate to either quantitative or qualitative findings. Performance can relate to the management of activities, processes, products systems, or organizations.
- 3.50 **PREVENTIVE ACTION:** Proactive measures taken to anticipate and/or prevent environment, health and/or safety problems.
- 3.51 **PREVENTION OF POLLUTION:** Use of processes, practices, techniques, materials, products, services or energy to avoid, reduce or control the creation, emission or discharge of any type of pollutant or waste, in order to reduce adverse environmental impacts.
- 3.52 **PROCEDURE:** Document noting specified methods of conducting an activity or a process.
- 3.53 **PROCESS:** Set of interrelated or interacting activities which transforms inputs into outputs.

- 3.54 **QUALIFIED PERSONNEL:** Individuals with knowledge and abilities gained through training, experience, or both, as measured against established requirements such as standards or tests, that enable them to perform a required function.
- 3.55 **RECORD:** Document(s) stating results or providing evidence of activities performed.
- 3.56 **REQUIREMENT:** Need or expectations that is stated, generally implied or obligatory.
- 3.57 **RISK:** The possibility of suffering harm or loss. Effect of uncertainty . An effect is a deviation from the expected either positive or negative.
- 3.58 **RISK ASSESSMENT:** The process of evaluating risk(s) arising from hazard(s), taking into account the adequacy of any existing controls, and deciding whether or not the residual risk(s) is acceptable.
- 3.59 **RISK - INITIAL:** The level of risk before controls (existing or new) have been put in place.
- 3.60 **RISK – RESIDUAL:** The risk remaining after risk reduction measures have been taken.
- 3.61 **RISK – TOLERABLE:** Risk that has been reduced to a level that can be endured with regard to legal obligations and policy.
- 3.62 **SAFETY:** Freedom from unacceptable risk or harm.
- 3.63 **TOP MANAGEMENT:** Those individuals who have the responsibility and authority to ensure compliance with the HSE MS and HSE Policy and are responsible for ensuring that all necessary resources are available for the implementing and maintaining of the HSE MS.
- 3.64 **UNCONTROLLED COPY:** A document, current at the time of issuance that is used for reference only and shall not be revised or controlled.
- 3.65 **WORKER:** Person performing work or work-related activities that are under the control of the organization. Worker includes Top Management, managerial and non-managerial persons that are regular, temporary, contract, contingent, and part-time employment categories. Employees are considered workers.
- 3.66 **WORKPLACE:** Any physical location in which work related activities are performed under the control of the organization.
- 3.67 **WORK INSTRUCTIONS:** Location or activity specific work instructions that comply with the SEG or BU Operational Controls and regulatory requirements.

4 CONTEXT OF THE ORGANIZATION

- 4.1 Top management shall determine and document internal and external issues that are relevant to their operations and that will affect their ability to achieve intended outcomes of this HSE MS. This includes environmental conditions being affected by or capable of affecting the LOC. See Guidance for Context of the Organization below for additional information.
- 4.2 To gain an understanding of the needs and expectations of workers and other interested parties Top Management shall determine and document:
 - 4.2.1 The interested parties, both internal and external, in addition to workers, that are relevant to this HSEMS;
 - 4.2.2 The relevant needs and expectations of workers and other interested parties; and,
 - 4.2.3 Which needs and expectations that are or could become compliance, legal, or other requirements.
 - 4.2.4 Understanding the context of the organization at the location is used to establish, implement, maintain and continually improve locations’ HSEMS. Internal and external issues can be positive or

negative and include conditions, characteristics or changing circumstances that can affect the intended outcomes of this HSEMS.

4.3 HSE MS Scope

4.3.1 Top management shall determine the boundaries and applicability of their HSEMS when establishing their scope.

4.3.2 The boundaries and applicability of this HSEMS shall include the physical boundaries of the LOC or when in a shared LOC those areas under direct control of LOC management following this HSE MS.

4.3.3 Considerations when determining LOC's HSE MS scope shall include:

- Internal and external issues, taking into account relevant needs and expectations of interested parties as determined prior;
- Requirements that are or could be legal, compliance, or other;
- Planned or performed work activities, organizational units, and physical boundaries;
- Activities, products and services within their control or influence that could impact their HSE MS performance; and,
- The authority and ability of the LOC to control and influence HSE.

4.3.4 The scope shall be maintained as documented information and available upon request to interested parties.

4.4 After establishing and implementing this HSE MS and associated processes top management shall maintain and continually improve the HSE MS in order to achieve intended HSE outcomes.

4.5 Guidance for Context of the Organization

4.5.1 This section is included for guidance only and shall not be considered as auditable requirements.

4.5.2 The following subsections are examples for consideration by the location when determining the context of their organization. The items listed are not meant to be an all-inclusive listing as it is up to the LOC to determine their internal and external issues.

4.5.3 Environmental conditions related to climate, air quality, water quality, land use, existing contamination, natural resource availability and biodiversity, that can either affect the location's purpose, or be affected by its environmental aspects.

4.5.4 External Health & Safety issues, such as:

- the cultural, social, political, legal, financial, technological, economic and natural surroundings and market competition, whether international, national, regional or local;
- introduction of new competitors, contractors, subcontractors, suppliers, partners and providers, new technologies, new laws and the emergence of new occupations;
- new knowledge on products and their effect on health and safety;
- key drivers and trends relevant to the industry or sector having impact on the organization;
- relationships with, as well as perceptions and values of, its external interested parties; and
- changes in relation to any of the above.

4.5.5 Internal Health & Safety issues, such as:

- governance, organizational structure, roles and accountabilities;

- policies, objectives and the strategies that are in place to achieve them;
- the capabilities, understood in terms of resources, knowledge and competence (e.g. capital, time, human resources, processes, systems and technologies);
- information systems, information flows and decision-making processes (both formal and informal);
- introduction of new products, materials, services, tools, software, premises and equipment;
- relationships with, as well as perceptions and values of, workers;
- the culture in the organization;
- standards, guidelines and models adopted by the organization;
- the form and extent of contractual relationships, including, for example, outsourced activities;
- working time arrangements, i.e. hours worked and / or work hours;
- working conditions; and,
- changes in relation to any of the above.

5 LEADERSHIP RESPONSIBILITIES AND EMPLOYEE PARTICIPATION

5.1 Leadership Responsibilities and Commitment

5.1.1 NOV Top Management has ultimate responsibility for the HSE MS; however, every person in the workplace needs to account for their health and safety and the health and safety of others.

5.1.2 SEG, BU, and / or LOC Top Management have responsibility for implementation of the HSE MS and shall demonstrate leadership and commitment with respect to the HSE MS by ensuring:

- Top Management takes responsibility and accountability for the prevention of work-related occupational injuries and ill health along with the provision for safe and healthy workplaces and activities and for the effectiveness of the HSE MS;
- Interested, non-managerial workers, are involved through consultation and participation with the establishment, implementation, and continual improvement of the HSE MS;
- Applicable HSE MS processes are established;
- HSE policy and objectives are established and are compatible with the strategic direction of the organization;
- The integration of the HSE MS requirements into the organization's business processes;
- Financial, human, and organizational resources needed for the HSE MS to establish, implement, maintain, and continually improve are available;
- The organization establishes processes for consultation and active participation of relevant workers in the establishment, implementation, maintenance, and continual improvement of the HSE MS;
- Workers are protected from reprisals when reporting HSE incidents, hazards, risks and opportunities;
- The importance of effective HSE management and of conforming to the HSE MS requirements are communicated;
- The organization aims to achieve its intended outcome through implementation of the HSE MS;
- Persons contributing to the effectiveness of the HSE MS for all functions are directed, and supported;

- Continual improvement is promoted;
- Other relevant management roles are supported in demonstrating their leadership as it applies to their area of responsibility;
- The organizational culture is lead and promoted with regards to the HSE MS; and,
- Persons working under the control of the organization are aware of their responsibilities within the HSE MS and the potential consequences of their actions or inactions on others in the workplace.

5.1.3 Top Management at relevant levels of the organization shall ensure that:

- Personnel assigned for managing the daily aspects of the HSE MS:
- Are given full responsibility and authority to plan, implement, maintain and document compliance of the HSE MS;
- Have access to Top Management, with the organizational authority to ensure that all aspects of operations comply with the HSE MS and company policies; and,
- Report on the performance of the HSE MS for review, as a basis for continual improvement.

5.1.4 All Employees shall:

- Conduct work safely to avoid hurting themselves and others;
- Conduct work in a manner to lessen impact to the environment;
- Do their job in a way that meets all applicable laws, regulations and HSE requirements;
- Report immediately all hazards/incidents to their direct supervisor, or HSE representative/designee after realizing a work-related event has occurred; and,
- Exercise their freedom and ability to identify areas for improvement and to initiate, recommend, or provide solutions to HSE related issues.

5.1.5 Workers at each level of the organization shall assume responsibility for those aspects of the HSE MS over which they have control.

5.1.6 The responsibilities and authorities shall be assigned and communicated within all levels of the organization and shall be maintained as documented information.

5.2 HSE POLICY

5.2.1 Top Management shall establish, implement, and maintain an HSE policy within the scope of the HSE MS as relevant and appropriate to the organization. This policy summarizes the commitment of NOV Top Management in relation to the HSE MS.

5.2.2 The policy shall at a minimum include:

- Commitment for safe work environment through prevention of work-related injury and ill health that is appropriate to the purpose, size and context of the organization specific to risks and opportunities;
- Commitment to setting and achieving HSE objectives;
- Commitment to eliminate hazards and reduce risks;
- Commitment to protection of the environment and prevention of pollution;
- Commitment to fulfill compliance, legal, and other requirements;
- Commitment for consultation and participation of workers; and,

- Commitment to continual improvement of the HSE MS.

5.2.3 The policy shall be maintained and available as documented information, communicated within the organization, and be available to interested parties

5.3 ROLES, RESPONSIBILITIES, AND AUTHORITIES

5.3.1 Relevant roles within the organization shall have responsibilities and authorities assigned by Top Management.

5.3.2 These roles shall be communicated within the organization.

5.3.3 Workers shall assume responsibility for those aspects of the HSE MS over which they have control.

5.3.4 Responsibility and authority shall be assigned by top management for:

- Ensuring the HSE MS conforms to this HSE MS Manual; and,
- Reporting on the performance of the HSE MS to top management.

5.4 WORKER CONSULTATION AND PARTICIPATION

5.4.1 Processes shall be established, implemented, and maintained to ensure effective consultation and participation in the HSE MS by workers, and workers' representatives if applicable, at all applicable levels and functions of the organization for the development, planning, implementation, performance evaluation, and actions for improvement by:

- Providing workers with the tools, time, training, and resources necessary to participate in, at a minimum, policy, planning, operation, performance evaluation and improvement relevant to the HSE MS;
- Providing workers with timely access to clear, understandable and relevant information about the HSE MS;
- Identifying and removing obstacles or barriers to participation and consultation wherever possible and minimize those that cannot be removed;
 - Example barriers and obstacles include failure to respond to workers inputs or suggestions, language, literacy, any practice or policy that discourages or penalizes worker participation, and/or fear of or threats of reprisals.
- Involving workers, especially non-supervisory, in determining their role(s) in the consultation and participation process and HSE MS;
- Encouraging timely reporting of work-related health, safety, and environmental hazards, risks, and incidents;
- Involvement in hazard identification, risk assessments and determination of controls; and,
- Appropriate involvement in incident investigation.

5.4.2 Worker consultation and participation should be incorporated into processes within HSE MS wherever need for involvement is determined.

6 PLANNING

6.1 GENERAL PLANNING REQUIREMENTS

6.1.1 When planning for the HSE management system, the issues determined in Context of the Organization, the requirements of interested parties and the scope of the HSE MS shall be considered to determine the risks and opportunities that need to be addressed to:

- Give assurance that the HSE management system can achieve its intended outcome(s);
- Prevent, or reduce, undesired effects; and,
- Achieve continual improvement.

6.1.2 The following shall be taken into account when determining risks and opportunities that need addressing for achieving intended outcomes:

- Hazards identified through the risk management process;
- HSE risks and opportunities that need to be addressed;
- Compliance, Legal and other requirements.

6.2 RISK MANAGEMENT, OPPORTUNITIES, and PLANNING

6.2.1 Risk management processes shall be established, implemented, and maintained for the purpose of:

- Initial and ongoing identification, assessment and prioritization of risks and opportunities, implementation of control measures to mitigate and/or lower the effects of risks, and ongoing review the effectiveness of existing controls and, if needed, modifying controls to lessen risk;
- Defining the scope, methodology, criteria, and timing to ensure it is proactive rather than reactive and used in a systematic way;
- Including relevant interested parties through consultation and participation;
- Taking into account the effectiveness of current controls; and,
- Providing for identification, prioritization and documentation of hazards and identification of those that are to be eliminated or minimized to a residual risk level as low as reasonably practicable.

6.2.2 The hazard and opportunity identification processes shall take into account, but is not limited to:

- How work is organized and performed;
- Social factors including workload, work hours, victimization, harassment, and bullying;
- Leadership and culture of the organization;
- Routine and non-routine activities and situations, including hazards arising from;
- Infrastructure, equipment, materials, substances, and the physical conditions of the workplace;
- Hazards that can arise when work is performed during production, assembly, construction, service delivery or maintenance product and service design, research, development, testing, and disposal;
- Human behaviors, factors, and capabilities;
- Past relevant internal and external incidents and emergencies and their causes;
- Reasonably foreseeable emergency situations;
- Activities and exposure of all persons (including workers, contractors, visitors) having access to the LOC;
- People in the vicinity of the workplace that can be affected by the organization;
- Workers at the workplace not under direct control of the organization;
- Hazards not controlled by the LOC that may originate outside of the LOC that may affect the LOC and / or workers;

- Design of work areas, processes, installations, machinery/equipment, operating procedures and work organization including the adaptation to the needs and capabilities of the workers involved;
- Situations occurring near the workplace caused by work-related activities under the control of the organization;
- Actual or proposed changes in the organization, its operations, processes, activities and HSE MS;
- Changes in knowledge and information about hazards; and,
- Relevant needs and expectations of interested parties.

6.2.3 Methods of risk control and reduction shall:

- Consider legal and other requirements;
- Consider the hierarchy of controls in the following order:
 - Elimination of hazards;
 - Substitution with less hazardous materials, processes, operations, or equipment;
 - Use of engineering controls;
 - Use of administrative controls, safety signs, markings, and warning devices; and / or
 - Use of personal protective equipment.

6.2.4 Risk planning shall be established.

- Planning shall include actions to:
 - Address risks and opportunities determined by the risk assessment process;
 - Address legal and other requirements; and
 - Prepare for and respond to emergency situations.
- Action planning shall consider best practices, technological options, financial aspects, and operational and business requirements.
- Planning shall include how to:
 - Include identified actions into the HSE management system or other business processes; and,
 - Evaluate the effectiveness the actions.

6.2.5 Documented information on risks and opportunities, the assessment of HSE risks, methodology used, outcomes of the assessment and controls identified shall be maintained and kept current to the extent necessary to have confidence the risk management processes have been carried out as planned.

6.3 ENVIRONMENTAL ASPECTS, IMPACTS, and OPPORTUNITIES

6.3.1 Within the scope of this HSE MS, processes shall be established, implemented, and maintained to determine, review and communicate among appropriate levels and functions, significant environmental aspects and associated impacts from activities, products and services that the LOC can reasonably control and influence.

6.3.2 To identify the environmental aspects and their impact, the following inputs and outputs related to the Organization's past and potential products and services shall be considered:

- Use of raw materials, natural resources, and energy;
- Design, production, and transportation/delivery;
- Use, end-of-life treatment, and final disposal;

- Emissions to air;
- Releases to water;
- Management of waste;
- Contamination to land;
- Applicable legal requirements, scope of the LOC's EMS, and interested party concerns;
- Normal and abnormal operating conditions;
- Reasonably foreseeable emergency situations; and,
- New and modified activities, products, and services.

6.3.3 Plans and processes shall be established to:

- Address and communicate among appropriate levels and functions significant environmental aspects;
- Address compliance obligations;
- Address risks and opportunities identified;
- Integrate and implement actions into HSE processes;
- Consider technological options, financial, operational and business requirements; and,
- Evaluate the effectiveness of these actions.

6.3.4 Documented information shall be maintained about the:

- Environmental aspects and associated environmental impacts;
- Criteria used to determine its significant environmental aspects; and,
- Significant environmental aspects.

6.4 LEGAL, COMPLIANCE, AND OTHER REQUIREMENTS

6.4.1 Processes shall be established, implemented, and maintained to fulfill the organization's obligation to the legal, compliance, and other requirements that are relevant to the organizations' operations and activities. These processes shall, as applicable to its hazards, HSE risks and HSE MS:

- Describe the relevant and most current legal, compliance, and other requirements and how this information is obtained;
- Determine compliance obligations including the relevant requirements of interested parties and how these obligations will be communicated;
- Define the frequency by which legal, compliance, and other requirements will be reviewed and as applicable relevant internal processes and interested parties updated;
- Include relevant interested parties in determining how to fulfill legal and other requirements; and,
- Consider these legal, compliance, and other requirements in other aspects of this HSE MS.

6.4.2 Documented information shall be maintained and retained to:

- Identify the legal and other requirements to which the organization subscribes related to the HSE MS, ensuring this documented information is updated to reflect changes;
- Provide evidence of the results of compliance evaluations; and,
- Demonstrate how compliance with legal and other requirements will be achieved.

6.5 OBJECTIVES

- 6.5.1 SEG, BU, or LOC shall establish objectives, at relevant functions and levels, to maintain and improve the HSE MS and HSE performance.
- 6.5.2 Objectives shall be consistent with the NOV HSE Policy, HSE MS, and integrated into the LOC's business processes. Objectives and planning process shall:
- Include a clear statement of the objectives and how they will be accomplished;
 - Include the designation of responsibility for achieving;
 - Be measurable, if practicable or capable of performance evaluation;
 - State the means and period by which the objectives are to be achieved;
 - Be documented, updated, and communicated throughout the organization;
 - Take into account applicable NOV business requirements, hazards, risks, legal requirements, significant environmental aspects, technological options, resource needs, views of relevant interested parties and financial and/or operational issues unique to a LOC or activity; and,
 - Determine how actions to achieve objectives will be integrated into business processes.
- 6.5.3 Documented information shall be maintained and retained on HSE objectives and plans on achieving.

7 SUPPORT

7.1 RESOURCES

- 7.1.1 Resources needed for the establishment, implementation, maintenance, and continual improvement of the HSE MS shall be determined and provided.

7.2 COMPETENCE

- 7.2.1 The organization shall develop processes that ensure NOV workers, that can impact HSE and environmental performance and its ability to fulfill its legal obligations, are competent based on appropriate education, training, qualification, and/or experience.
- 7.2.2 The necessary criteria for determining competence shall be defined, and be based on education, training, experience, and/or examination.
- 7.2.3 Competency needs, associated with the HSE MS, shall be determined.
- 7.2.4 Where applicable, actions shall be taken to acquire and maintain the necessary competence and evaluate the effectiveness of actions taken.
- 7.2.5 Applicable actions can include the provision of training, mentoring, or reassignment of workers or the hiring or contracting of competent persons.
- 7.2.6 Appropriate documented information shall be retained as evidence of competence.

7.3 AWARENESS

- 7.3.1 Persons performing work under the organization's control shall be aware of:
- The existence of HSE Policy, HSE objectives and HSE MS, its purpose, and their role in achieving the commitments, including how their work can affect the organization's ability to fulfill its compliance obligations.;
 - The hazards, risks and actions, health and safety consequences and significant environmental impacts related to their work activities, and the benefits of improved HSE performance;

- The potential consequences for not following specified operational procedures or work instructions;
- The ability to remove themselves from work situations that they consider present an imminent and serious danger to their life or health, as well as the arrangements for protecting them from undue consequences for doing so; and,
- Information and lessons learned concerning relevant incidents

7.4 COMMUNICATION

7.4.1 Processes shall be established, implemented, and maintained to ensure relevant, reliable and consistent internal and external information and decisions related to the HSE MS are communicated among the various levels and functions of the organization and to contractors, other visitors to the workplace and interested parties.

7.4.2 Processes shall be established, implemented, and maintained to determine the need for communication and methods for receiving, documenting, and responding to relevant information and requests relevant to the HSE MS.

7.4.3 Processes to communicate information to internal and external interested parties shall consider:

- When to communicate;
- What to communicate / disseminate;
- To or with whom to communicate;
- How to communicate;
- Diversity aspects (i.e., language, culture, literacy) as appropriate;
- Significant health, safety, and environmental aspects;
- Changes to processes, products, activities, or the HSE MS;
- Compliance obligations, legal and other requirements; and,
- Recommendations for continual improvement.

7.4.4 Documented information as evidence of communications shall be maintained, as appropriate.

7.5 DOCUMENTED INFORMATION

7.5.1 Processes shall be established, implemented, and maintained to document the suitability, adequacy and effectiveness of the HSE MS.

7.5.2 The extent of documented information for the HSE MS can differ from one level of the organization to another due to:

- The size of the LOC and its type of activities, complexity of processes, products and services, and their interactions;
- The need to demonstrate fulfilment of compliance obligations;
- Competence of persons doing work under its control; and,
- The need to demonstrate effective planning, operation, and control of processes related to health, safety, and environmental risks associated with identified hazards.

7.5.3 Documentation for the HSE MS shall include:

- A description of the main elements of the HSE MS and their interaction, and reference to related documented information;

- Documented information required by applicable Standards; and
- Documented information determined as being necessary for the effectiveness of the HSE MS.

7.5.4 Creating and Updating

- When creating, and updating documented information related to the HSE MS, processes shall be implemented to ensure appropriate:
 - Identification and description, to include but not limited to; title, date, author, or reference number;
 - Format (i.e., language, software version, graphics) and media (i.e., paper, electronic); and,
 - Review and approval prior to use for suitability and adequacy.

7.5.5 Control

- Documented information required by the HSE MS and applicable Standards shall be controlled to ensure it:
 - Is available and suitable for use, where and when it is needed;
 - Is adequately protected from loss of confidentiality, improper use, or loss of integrity; and,
 - Provides for the identification, storage, protection, retrieval, retention, and disposal.
- For the control of documented information related to the HSE MS, processes shall be implemented to ensure that documents maintained (other than records);
 - Have a document number;
 - May be located by relevant persons;
 - Are periodically reviewed;
 - Are relevant, legible, and identifiable;
 - That are obsolete are so identified as to avoid unintended use;
 - Are revised/updated as necessary to ensure suitability;
 - Identify version history;
 - Are current and available near points of use;
 - Are approved by authorized personnel as specified in applicable operations procedures prior to issue; and,
 - Are appropriately retained.

7.5.6 Documented information of external origin determined to be necessary for the planning and operation of the HSE MS shall be identified and, as appropriate, controlled.

8 OPERATION

8.1 OPERATIONAL PLANNING AND CONTROL

8.1.1 Control processes shall be planned, established, implemented, controlled, and maintained that are needed to meet HSE MS requirements regarding addressing risks and opportunities, hazard identification and HSE objectives and planning.

8.1.2 Operational Control processes shall be established:

- For operations and activities associated with identified hazard(s) and significant environmental aspects where the implementation of controls is required to manage HSE risks and impacts;

- To identify operations or activities which need to be controlled, specify the operating criteria, and implement controls in accordance with the established criteria;
 - To consider activities and include controls relevant to persons doing work under NOV control;
 - To provide sufficient details to ensure proper execution of activities in compliance with applicable laws, regulations and company standards as set forth in the HSE MS;
 - To address the identified HSE risks and environmental aspects of goods, equipment and services purchased and/or used and consider the need to communicate or provide this information to interested parties;
 - To address situations where the absence of documented information could lead to deviations from the HSE MS and HSE objectives;
 - To communicate HSE and HSE MS requirements to workers and other relevant person(s) doing work under NOV control including external providers and contractors;
 - As appropriate, to ensure that HSE requirements are addressed in the design and development process for the product or service, considering each life cycle stage;
 - To determine HSE MS requirements for the procurement of products and services, as appropriate;
 - As appropriate provide information about potential significant HSE impacts associated with the transportation or delivery, use, end-of-life treatment and final disposal of NOV products and services as they apply to our activities; and,
 - To ensure operations and activities are performed per documented processes and stipulated operating criteria where their absence could lead to deviation from HSE Policy and objectives.
- 8.1.3 Where operational controls do not adequately deal with activity/task specific hazards or risks, LOC and/or activity specific work instructions shall be established as an additional control measure.
- 8.1.4 At multi-employer workplaces, LOC management shall coordinate the relevant parts of the HSE MS with the other organizations.
- 8.1.5 Documented information shall be maintained to the extent necessary to have confidence that the processes have been carried out as planned.

8.2 MANAGEMENT OF CHANGE (MOC)

- 8.2.1 Processes shall be implemented to manage HSE hazards, risks and opportunities for planned or temporary changes in workforce, activities, products, processes, services, legal requirements, developments in knowledge and technology, the HSE MS, or relevant needs of interested parties to ensure they do not cause decline of HSE performance.
- 8.2.2 The MOC planning process applies to any change that could reasonably be expected to:
- Introduce new hazards;
 - Cause an increase in the level of HSE risk;
 - Adversely impact the effectiveness of the HSE MS; and,
 - Change: organizational responsibility, legal and other requirements, LOC design, process/procedure modifications, material, equipment, and/or business strategy.
- 8.2.3 In the case of planned changes, whether permanent or temporary, the MOC process shall be undertaken before the change is implemented.

- 8.2.4 The consequences of unintended changes shall be reviewed and, as necessary, actions taken to mitigate any adverse effects.
- 8.2.5 The process for implementation of planned changes shall identify responsibilities and authorities for managing changes and controlling their associated risks.
- 8.2.6 Documented information shall be retained as appropriate for planned changes including the associated assessments of HSE risk.

8.3 PROCUREMENT, MANAGEMENT OF CONTRACTORS, OUTSOURCING

- 8.3.1 Processes shall be established, implemented and maintained for the control of procurement of products and services from contractors to ensure conformity to HSE MS.
- 8.3.2 The procurement process shall apply HSE criteria, as applicable, for the selection of contractors.
- 8.3.3 NOV LOC management shall coordinate with workers and contractors to identify, assess, and control risks arising from:
 - Contractors' activities and operations that impact the LOC;
 - LOC's activities and operations that impact the contractor's workers; and,
 - Contractors' activities and operations that impact other interested parties in the workplace.
- 8.3.4 NOV LOC management shall ensure outsourced functions and processes are controlled by ensuring outsourcing arrangements are consistent with compliance, legal and other requirements for achieving the intended outcomes of the LOC's HSE MS. The type and degree of control shall be defined in the LOC's HSE MS.

8.4 EMERGENCY PREPAREDNESS AND RESPONSE

- 8.4.1 Processes shall be established, implemented, and maintained to assess HSE risks associated with emergency situations to anticipate, prevent, and minimize risks arising from potential emergencies.
- 8.4.2 Emergency response processes shall be implemented to:
 - Identify and plan for potential emergency situations including provisions for first aid;
 - Include actions to respond to actual emergency situations;
 - Include actions to prevent or mitigate the consequences of emergency situations;
 - Be appropriate to the magnitude of the emergency and the potential HSE impact;
 - Determine how to respond to such emergency situations;
 - Periodically test and exercise planned response actions where practicable; and
 - Periodically evaluate and as necessary revise the processes and planned response actions, after the occurrence of actual emergency situations or tests.
- 8.4.3 Relevant information and training shall be provided to personnel at all levels of the organization, on their responsibilities and duties related to emergency prevention, preparedness, and response as appropriate.
- 8.4.4 Relevant emergency response processes shall be communicated to applicable; contractors, visitors, relevant emergency response services, government authorities, and, as appropriate, the local community .
- 8.4.5 The needs and capabilities of relevant interested parties shall be considered to ensure their involvement as appropriate, in the development of planned response.

- 8.4.6 Documented information shall be maintained and retained to have confidence that the processes are carried out as planned.

9 PERFORMANCE EVALUATION

9.1 MONITORING, MEASUREMENT, ANALYSIS, AND EVALUATION

9.1.1 Process shall be implemented and maintained for monitoring, measuring, analyzing and evaluating the performance and effectiveness of the HSE MS.

9.1.2 SEGs or BUs shall determine:

- What needs to be monitored and measured to meet the requirements of applicable laws, regulations and standards, and compliance obligations;
- Their activities and operations in relation to identified hazards, risks, impacts, and opportunities;
- Their progress towards the achievement of their HSE objectives;
- The effectiveness of operational and other controls;
- The methods for monitoring, measurement, analysis, and evaluation, as applicable, to ensure valid results;
- The criteria against which the organization will evaluate its HSE performance, and appropriate indicators;
- When the monitoring and measuring shall be performed; and
- When the results from monitoring and measurement shall be analyzed and evaluated.

9.1.3 Relevant interested parties (workers) shall be included in determining what is to be measured, monitored, and evaluated.

9.1.4 Monitoring and measuring equipment shall be calibrated or verified, maintained, and used where applicable. Documented evidence of calibrations or verifications shall be maintained.

9.1.5 Appropriate documented information shall be retained as evidence of the monitoring, measurement, analysis, and evaluation results.

9.1.6 Relevant information related to the performance of the HSE MS shall be communicated both internally and externally as identified in communications processes and as required by applicable law.

9.2 EVALUATION OF COMPLIANCE

9.2.1 Processes shall be established, implemented, and maintained to evaluate HSE MS compliance and general environmental performance.

9.2.2 SEG, BU, and / or LOCs shall:

- Determine HSE regulatory, compliance, and other requirements that require monitoring and measurement and the frequency and method by which they will be evaluated;
- Determine criteria for which HSE regulatory, compliance and other requirements will be evaluated; and
- Maintain knowledge and understanding of compliance obligations and status.

9.2.3 Documented information shall be retained as evidence of the results of its compliance evaluation.

9.3 INTERNAL AUDITS AND ASSESSMENTS

9.3.1 Processes shall be established, implemented, and maintained to conduct audits and assessment of compliance with this HSE MS Manual, applicable legal and other requirements, and shall include:

- The responsibilities, competencies and requirements for planning and conducting internal audits, reporting audit results, and retaining associated documented information;
- Determination, with consultation of relevant interested parties (workers), of audit criteria, scope, frequency, methods; and,
- Include selection of competent auditors ensure objectivity and impartiality of the audit process.

9.3.2 Internal Audit Process

- Internal HSE audits shall be conducted at planned intervals to provide information on whether the organization's HSE MS is:
 - Effectively implemented and maintained;
 - Conforms to the requirements of the NOV HSE Policy, NOV HSE MS Manual, and as applicable, its own HSE Policy, HSE Operational Controls, HSE Work Instructions, HSE Regulatory Compliance Requirements and HSE Standards (i.e. ISO 45001, and ISO 14001, etc.);
 - Effective at meeting its HSE objectives.
- Auditors shall be competent and should be independent of the activity being audited, wherever practicable, and should in all cases act in a manner that is free from bias and conflict of interest.
- Internal audits shall take into consideration the HSE risks and environmental importance of processes concerned, changes affecting the organization, the results of previous audits, the status of nonconformities and the effectiveness of actions taken.
- Internal audits may be conducted at the direction of Top Management whether planned, random, or un-announced at any NOV LOC.
- Nonconformities identified during internal audits are subject to appropriate corrective action.
- Results of internal audits shall be reported to relevant management, relevant audit results are reported to workers and workers' representatives, and other relevant interested parties.

9.3.3 Documented information shall be retained as evidence of the implementation of the audit program and the audit results.

9.4 MANAGEMENT REVIEW

9.4.1 Processes shall be established, implemented, and maintained to ensure Top Management at relevant levels review the HSE MS, at planned intervals (at least every 12 months) to ensure its continuing suitability, adequacy, and effectiveness.

9.4.2 Inputs for Management reviews shall include consideration of:

- The status of actions from previous management reviews;
- Changes in:
 - external and internal issues that are relevant to the HSE MS;
 - The needs, expectations, communications including complaints of interested parties and compliance obligations;
 - Its significant health, safety, and environmental aspects; and,
 - Health, safety, and environmental risks and opportunities.
- The extent to which the HSE policy has been met and objectives have been achieved;

- Information on the HSE performance, including status and trends in:
 - Incidents, nonconformities, continual improvement, investigation outcomes, and corrective actions;
 - Relevant communication(s) with interested parties;
 - The results of worker participation and consultation;
 - Monitoring and measurement results;
 - Internal and external audit results;
 - Fulfillment of requirements of this HSE MS, relevant standards, legal requirements, and requirements to which the organization subscribes; and,
 - Adequacy of resources for maintaining an effective HSE MS.
- Opportunities for continual improvement.

9.4.3 Outputs from Management Reviews shall include:

- Conclusions on the continuing suitability, adequacy, and effectiveness of the HSE MS;
- Decisions related to any need for changes to the HSE MS or continual improvement opportunities including resources;
- Actions, if needed, when HSE objectives have not been achieved;
- Opportunities to improve integration of the HSE MS with other business processes, if needed;
- Any implications for the strategic direction of the organization; and,
- Top Management shall communicate relevant results of the management review(s) to appropriate levels of the organization.

9.4.4 Documented information shall be retained as evidence of the results of management reviews.

10 IMPROVEMENT

10.1 INCIDENT, NONCONFORMITY, CORRECTIVE AND PREVENTIVE ACTION

10.1.1 Processes shall be established, implemented, and maintained to determine opportunities for improvement and implement necessary actions to achieve the intended outcomes of the HSE MS.

10.1.2 Processes are to ensure that when an incident or nonconformity occurs, the LOC shall:

- React in a timely manner to the incident or nonconformity, and, as applicable:
- Act to control and correct it;
- Deal with the consequences including mitigating environmental impacts;
- Evaluate, with participation of workers and involvement of other relevant interested parties, the need for corrective action to eliminate the causes of the incident or nonconformity to ensure that it does not recur, or occur elsewhere, by:
 - Reviewing and investigating the incident or nonconformity as appropriate;
 - Determining the causes of the incident or nonconformity; and
 - Determining if similar incidents and nonconformities or causes exist or could potentially occur.
- As appropriate, review existing related HSE and other risks;
- Implement any action needed including corrective action, in accordance with the Hierarchy of Controls and Management of Change processes. Corrective actions shall:

- Review the identification of hazards and the evaluation of risks as outlined in Hazard Risk Assessment Processes of this HSE MS manual; and,
- Be appropriate to the effects or potential effects of the incidents or nonconformities including environmental impacts identified.
- Communicate the results of the incidents and nonconformities;
- Review the effectiveness of any corrective and preventive action taken; and,
- Make changes to the HSE MS, if necessary.

10.1.3 Documented information shall be retained as evidence of the nature of the incidents or nonconformities, any subsequent actions taken, and the results of any corrective action.

10.2 CONTINUAL IMPROVEMENT

10.2.1 NOV LOC management, with consultation of relevant interested parties, shall continually improve the suitability, adequacy, and effectiveness of the HSE MS, prevent occurrence of potential incidents and nonconformities, and promote improvements in HSE performance.

10.2.2 The following shall be considered as core aspects of the continual improvement process:

- HSE incidents, actual and potential nonconformities;
- Results of analysis and evaluation of HSE performance;
- Planned changes (Ref. MOC);
- Compliance with this HSE MS manual;
- Applicable legal and other requirements;
- The responsibilities, competencies and requirements for planning and conducting internal audits, reporting;
- Promotion of culture and worker participation with implementing actions supporting HSE within the LOC; and,
- Communication with workers of relevant results of continual improvement.

10.2.3 The LOC shall consider outputs of activities described in:

- The context of the organization,
- Hazard identification, risk assessment, risk control, and environmental aspects;
- Objectives and targets, and plans to achieve them;
- Information, communication, participation, and consultation;
- Performance measurement and monitoring; and,
- Management reviews.

10.2.4 Documented information shall be maintained and retained as evidence of continual improvement.