Eskom	Programme	Nuclear Operating Unit

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Compiled by	Functional Responsibility	Authorized by
M Tshivhilinge	**A Stephanus**	**K Featherstone**
Senior Advisor	**Middle Manager**	**Chief Nuclear Officer (Acting)**
NOU Safety Culture and Human Performance	**Independent Safety Evaluation Department**	
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1. Introduction

Eskom's Nuclear Management Policy (32-83) requires the promotion of a strong nuclear and occupational safety culture through the development and reinforcement of good safety attitudes and behaviour in individuals and teams, with nuclear and occupational safety being the overriding priority. This is required throughout all phases of the nuclear installation life-cycle namely, siting; design; construction and commissioning; manufacture of components; operation and decommissioning.

Eskom considers that the health and safety of the employees, suppliers, sub-suppliers, contractors, the general public, and the protection of the environment is of paramount importance when managing its activities.

Integral to achieving this is the implementation of a Safety Culture Enhancement Programme (SCEP) to develop and maintain a strong safety culture that serves to make nuclear safety the overriding priority for each individual associated with the Nuclear Operating Unit (NOU) activities.

In addition, the National Nuclear Regulator (NNR) requires that licensees must develop and introduce a SCEP, which must provide the framework for implementation of the aspects of safety culture within the licensee organisation.

This document defines the safety management system requirements for implementation within the NOU and therefore fulfils the National Nuclear Regulator (NNR) requirements that licensees develop a SCEP that provides the framework for implementation of the aspects of safety culture within the licensee organisation.

The foundational traits and characteristics of a healthy nuclear safety culture have been adopted from the Institute of Nuclear Power Operations (INPO).

These traits, when embraced well, will influence values, assumptions, experiences, behaviours, beliefs, and norms that will sustain the execution and operational activities within the NOU. These foundational traits and characteristics will also apply to all supplemental personnel, Level 1 suppliers and their sub-suppliers.

2. Supporting Clauses

2.1 Scope

This Nuclear Safety Management Programme focuses on the integration of its key elements to ensure that safety is not compromised. Its principles will be used to promote good nuclear safety, radiological safety, occupational safety, environmental safety, and security consciousness.

2.1.1 Purpose

The purpose of this document is to describe:

- The key elements of the safety management system, which incorporates occupational safety, nuclear safety and human performance;
- To define the Nuclear Safety Culture Traits for the NOU, its supplemental personnel and Level 1 suppliers and their sub-suppliers as prescribed in RD-0034;

- The responsibilities of individuals and management to foster a healthy safety culture; and
- Human Performance forms part of the Nuclear Safety Culture Enhancement Programme.

2.1.2 Applicability

This document shall apply to:

- All nuclear Business Areas in Eskom.
- All supplemental personnel, performing tasks within the NOU Integrated Management System (IMS), all Level 1 suppliers and their sub-suppliers of products and services with a high importance to nuclear safety.

2.1.3 Effective date

Date of authorisation.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] 12-012 INPO Traits of a Healthy Nuclear Safety Culture

[2] 238-8 Koeberg Operating Unit Safety and Quality Management Manual

[3] 32-83 Eskom's Nuclear Management Policy

[4] IAEA INSAG-4 'Safety Culture'

[5] RD-0034 Quality and Safety Management Requirements for Nuclear Installations

[6] 240-161673714 NOU Safety Culture Forum Terms of Reference

2.2.2 Informative

[7] 238-101 Quality and Safety Management Requirements for Nuclear Suppliers Level 1

[8] 238-11 Nuclear Operating Unit Occupational Health and Safety Requirements

[9] 238-89 Nuclear Operational Plan

[10] 32-727 Safety, Health, Environment and Quality (SHEQ) policy

[11] Excellence in Human Performance: INPO, 1997

[12] IAEA GSR Part 2 Leadership and Management for Safety

[13] IAEA Nuclear Energy Series No.NG-T-2.7 "Managing Human Performance to Improve Nuclear facility Operation"

[14] INPO-06-003 Human Performance Reference Manual

[15] ISO 9001 Quality Management Systems

[16] RG-0007 Regulatory Guide on Management of Safety

[17] WANO Performance Objectives and Criteria (PO&Cs), issued October 2019

2.3 Definitions

2.3.1. **Human Performance (HP)**: A combination of behaviour and results (HP = B + R)

2.3.2. **Level 1 suppliers:** Suppliers, sub-suppliers and designers who supply products and services with a high importance to nuclear safety during any nuclear installation life-cycle phase. Level 1 supplier is required to include safety culture aspects (including establishing a safety culture enhancement programme) as part of their integrated management system, and that complies with the requirements of this document.

2.3.3. **Leading indicator:** Indicator aspect monitoring involving identifying pre-cursor level problems for resolution before they become larger organisational issues. (Examples such as self-assessments; field observations; Corrective Action Programme (CAP)).

2.3.4. **Lagging indicator:** indicator aspect monitoring the occurrence and frequency of events that occurred in the past. (Examples include CLOCK, Human Event rate).

2.3.5. **Nuclear Operating Unit:** Collective Business Areas that are involved in all life-cycle phases of the nuclear installations within Eskom.

2.3.6. **Nuclear Safety Culture:** Core values and behaviours resulting from a collective commitment by leaders and individuals to emphasise safety over competing goals to ensure protection of people and the environment.

2.3.7. **Safety culture enhancement plan:** Document that is developed by the organisation to document specific Safety Culture activities that will be carried out under the programme planned for a specific period.

2.3.8. **Safety Management System (SMS):** Systematic approach to managing safety through formulation and application of organizational goals, policies, structures, planning, accountability, and safe standard operating procedures. The SMS is implemented, monitored, and controlled for continuous improvement, achievement and sustainability.

2.3.9. **Safety Culture Forum:** The Forum that maintain oversight, consider actions for effective implementation of the NOU SCEP and advise on direction and alignment for the NOU Business Areas, as defined in its Terms of Reference.

2.4 Abbreviations

Abbreviation	Explanation
BA	Business Area
CNO	Chief Nuclear Officer
HP	Human Performance
IAEA	International Atomic Energy Agency
IMS	Integrated Management System
INPO	Institute of Nuclear Power Operations
NNR	National Nuclear Regulator (SA)
NOU	Nuclear Operating Unit
NSC	Nuclear Safety Culture
SCF	Safety Culture Forum
SCEP	Safety Culture Enhancement Programme
ToR	Terms Of Reference
WANO	World Association of Nuclear Operators

2.5 Roles and Responsibilities

Nuclear safety culture must be embedded at all levels in the NOU. Each level uniquely contributes to fostering and strengthening a healthy nuclear safety culture.

2.5.1 Eskom board and senior executives

As a nuclear organisation it is incumbent on the board and senior executives to take cognisance of the impact (direct and indirect), of all policies and strategic decisions on nuclear safety, inclusive of the nuclear safety culture.

2.5.2 Chief Nuclear Officer

The Chief Nuclear Officer (CNO) is responsible for:

2.5.2.1 Ensuring that the Eskom senior executives have appropriately considered the impacts, direct and indirect, of all policies and strategic decisions on nuclear safety, inclusive of the nuclear safety culture, and to raise concerns through the appropriate governance structures.

2.5.2.2 Keeping the senior executives appraised of the health of the nuclear safety culture within the organisation by:

- maintaining oversight of the effective implementation of the safety culture enhancement plan; and
- ensuring the annual assessment of the nuclear safety culture.

2.5.2.3 The establishment of the requirements and the implementation of the Nuclear Safety Management Programme.

2.5.2.4 Fostering a healthy Safety Culture within the NOU.

2.5.3 CNO's Direct Reports and all Managers

The NOU Management Team is responsible for giving effect to the nuclear safety management programme by:

2.5.3.1 Fostering a healthy safety culture within their respective area of control in accordance with the nuclear safety culture traits;

2.5.3.2 Implementing relevant safety culture initiatives in accordance with the BAs safety culture enhancement plan;

2.5.3.3 Actively demonstrating the behaviours necessary to foster a healthy safety culture and setting expectations that are consistent with HP excellence;

2.5.3.4 Recognising and resolving conflicts between safety and production;

2.5.3.5 Encouraging participation from staff at all levels to embrace nuclear safety as the overriding priority in decision-making process;

2.5.3.6 Ensuring safety culture awareness to all individuals within the BAs is carried out;

2.5.3.7 Ensuring that all human resources and management systems, procedures and processes are designed, implemented and maintained with the aim of promoting a sustainable strong nuclear safety culture;

2.5.3.8 Establishing an open reporting culture, where events are treated as an opportunity to improve individual and organisational performance; and

2.5.3.9 Creating an environment that promotes a healthy respect for the unique technology that nuclear power plants present, and thus to promote caring conservative and thoughtful decision-making by personnel.

2.5.4 Independent Safety Evaluation (ISE) Manager

ISE Manager provide the overall oversight to the design, development, implementation and maintenance of the NOU nuclear safety management programme, by:

2.5.4.1 Fostering and demonstrating a healthy safety culture in accordance with the nuclear safety culture traits;

2.5.4.2 Implement relevant safety culture initiatives in accordance with the NOU SCEP;

2.5.4.3 Ensuring that all human resources and management systems, procedures and processes are designed, implemented and maintained with the aim of promoting a sustainable strong nuclear safety culture;

2.5.4.4 Ensuring safety culture awareness to the NOU individuals is carried out; and

2.5.4.5 Ensuring that the SCF meetings are held as stipulated in its ToR or as directed by the CNO.

2.5.5 Safety Culture Forum (SCF)

2.5.5.1 The Nuclear Operating Unit (NOU) Safety Culture Forum (SCF) has been established to monitor the effective implementation of the Safety Culture Enhancement Programme (SCEP) and improving safety culture within NOU. The Forum represents a unique platform for the exchange of information and ideas.

2.5.5.2 The forum chairperson is the CNO and the ISED manager is the Alternate Chairperson by default.

2.5.5.3 The NOU BAs Safety Culture (SC) and Human Performance (HP) Custodians forms part of the Forum's principal members.

2.5.6 Individual Responsibilities

Individuals understand and demonstrate personal responsibility for their behaviours and work practices in accordance with standards, procedures and expectations that support nuclear safety.

2.6 Process for Monitoring

2.7.1. Monitoring of this programme will be performed as part of the Quality Assurance (QA) Monitoring and Nuclear Safety Assurance (NSA) Program.

2.7.2. An annual review will be conducted as detailed in the "Annual Review" section of this document.

2.7.3. Safety Culture is measured using suitable leading and lagging indicators.

2.7 Related/Supporting Documents

- NOU Nuclear safety culture enhancement plan

- NOU Safety Culture Forum ToR

3. Nuclear Safety Management System

- The safety management system provides the framework for promoting, establishing and maintaining a strong safety culture.

Figure 1: Nuclear Safety Management System

- The safety management system integrates all elements of the integrated management systems, and promotes safety culture through:
  - ensuring common understanding of the key aspects of safety culture within the NOU;
  - providing the means by which the NOU supports individuals and teams in carrying out their tasks safely and successfully, taking into account the interaction between individuals, technology and the organisation; and
  - providing the means by which the NOU continually seeks to develop and improve its safety culture.

4. Nuclear Safety Culture

4.1 Key Aspects of Safety Culture

The following aspects are described in RD-0034, 'Quality and Safety Management Requirements for Nuclear Installations', and considered as important to establish a healthy Nuclear Safety Culture.

- Individual awareness / Questioning Attitude
- Knowledge, Authority and Competence
- Example Function of Management (Safety Leadership)
- Commitment to Safety
- Acceptance of Authorities
- Acceptance of Rules
- Motivation to reach goals
- Safety Promoting Work Environment (including Housekeeping)
- Open Communication (Including with Authorities)
- Monitoring of Safety Culture Performance;
- Operational Experience Feedback

4.2 Nuclear Safety Culture Traits

The International Nuclear industry via the Institute of Nuclear Power Operations has packaged the framework for nuclear safety culture into three categories: Individual Commitment to safety, Management Commitment to safety and Management Systems.

These are similar to the elements of safety culture in International Nuclear Safety Advisory Group (INSAG)-4, Safety Culture. Appendix A lists these ten traits and the cascading attributes.

The categories and their primary traits are as follows:

- Individual Commitment to Safety;
  - Personal Accountability - PA
  - Questioning Attitude - QA
  - Safety Communication - CO
- Management Commitment to Safety;
  - Leadership Safety Values and Actions - LA

- Decision Making - DM
- Respectful Work Environment - WE

- Management Systems
  - Continuous Learning - CL
  - Problem Identification and Resolution - PI
  - Environment for Raising Concerns - RC
  - Work Processes - WP

4.3 Nuclear Safety Culture Framework

NOU gives effect to three categories of the Safety Culture traits through the following framework which are illustrated in the Figure 2.

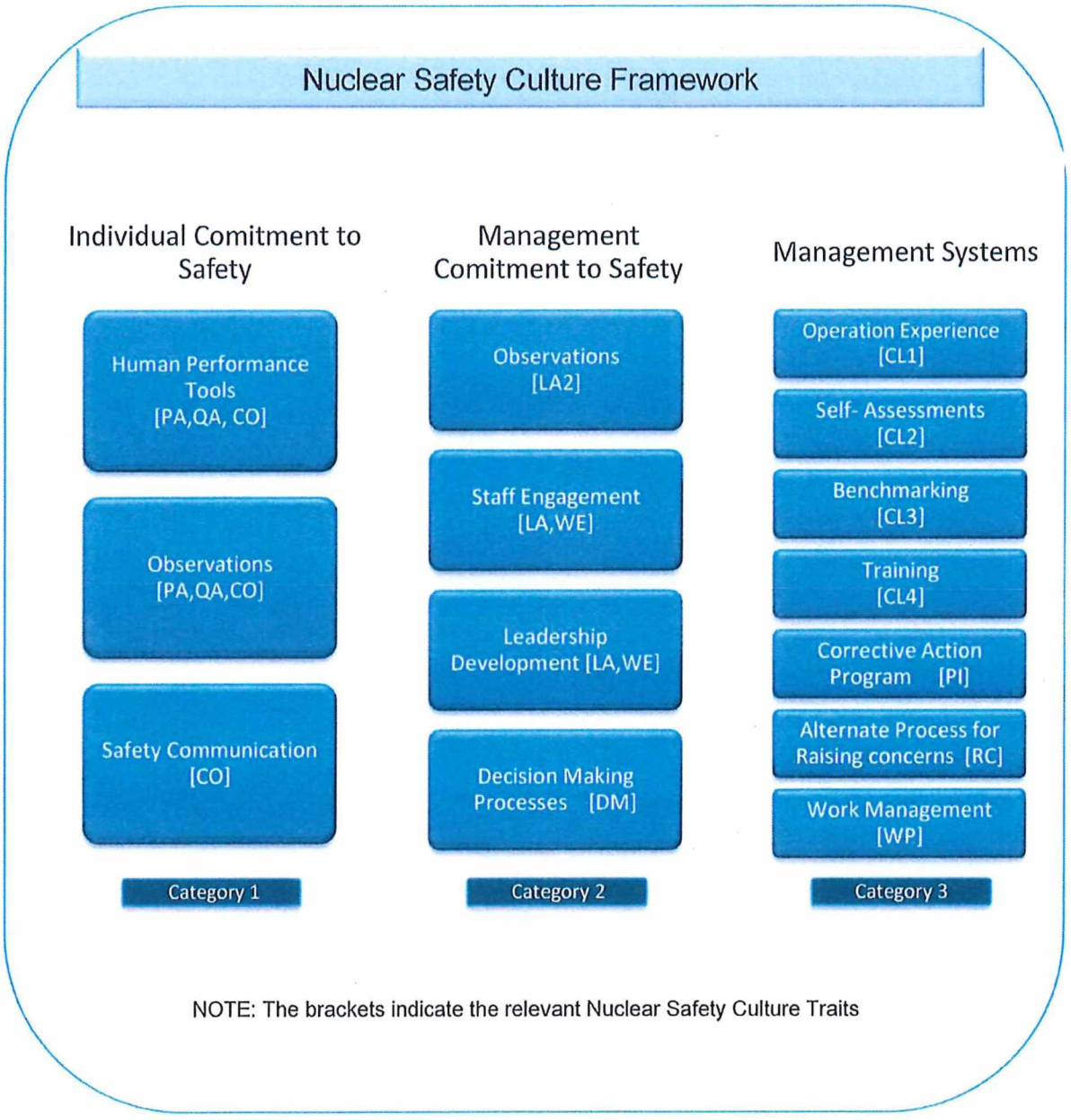


Figure 2: Nuclear Safety Culture Framework

4.3.1 Individual Commitment to Safety (Category 1)

Category 1: Individual commitment to safety comprises of three traits namely, Personal Accountability [PA], Questioning Attitude [QA] and Safety Communication [CO].

HP cascades from the SCEP and it gives effect to category 1. Appendix B defines the five principles that HP is based on.

Human Performance is integrated into existing operational practices to ensure continual improvement. The following sub-categories have been designed to give effect to these traits;

- Human Performance Tools
- Observations
- Safety Communication

Plant workers benefit from using HP tools specifically tailored to their activities. Examples of groups that are classified as plant workers are operators, technicians, artisans and chemists.

As knowledge workers do not typically touch the physical plant, their HP tools are also tailored accordingly. Examples of knowledge workers are Engineers, Planners, Schedulers, and Trainers.

Appendix C describes the strategic approach to human performance.

Plant Workers	**Knowledge Workers**
2M Rule	2M Rule
Procedure Use & Adherence	Procedure Use &Adherence
Self-Check	Self-Check
Effective Communication	Validate Assumptions
Pre-job Brief	Independent Review

4.3.2 Management Commitment to Safety (Category 2)

Category 2: Management commitment to safety comprises of the three leadership traits namely, Leadership Values and Actions [LA], Decision Making [DM] and Respectful Work Environment [WE].

The following sub-categories have been designed to give effect to these traits and therefore shall be reflected in the specific BAs Safety Culture;

- Job Observations;
- Leadership Development; and
- Staff engagement sessions

4.3.3 Management Systems (Category 3)

Category 3: Management systems comprise of the four process traits namely Continuous Improvement [CL], Problem Identification and Resolution [PI], Environment for Raising Concerns and Work processes [RC].

The following sub-categories have been designed to give effect to these traits, and therefore shall be reflected in the specific BAs.

- Operation Experience;
- Self- Assessments;
- Benchmarking;
- Training;
- Corrective Action Program;
- Alternate Process for Raising concerns; and
- Work Management.

Note: A healthy Nuclear Safety Culture will be achieved if we appropriately integrate the Nuclear Safety Culture Framework (Figure 2) into the NOU.

5. Annual Review

- Periodic assessment and evaluation of safety culture are important aspects in ensuring that a healthy safety culture is developed and maintained in the NOU.
- The health of the safety culture shall be reviewed on a three-year cycle basis. This will take the form of self-assessments on an annual basis for two years; and an independent survey for the third year.
- The annual assessment and/or survey report is submitted to the NNR for information as soon as the report is endorsed by NEXCO.
- Safety Culture is measured using suitable leading and lagging indicators and qualitative information shall be used to inform the reviews, when performed as self-assessment.

6. Safety Culture Enhancement Plan

- Safety culture enhancement plan is updated on an annual basis in accordance with the findings of the safety culture review.

- The annual review and cascading safety culture enhancement plan must be supported at the relevant nuclear executive management fora.

7. Acceptance

This document has been seen and accepted by:

Name	Designation
NEXCO Members	Presented and accepted at the NEXCO meeting of 02 August 2022
Phindiwe Xotyeni	Nuclear Commercial (PQE)
Shandre Brown	Nuclear Commercial (PQE)
Nomfusi Gumede	Nuclear Engineering (NE)
Nomathemba Radebe	Nuclear Fuel (NF)
Masixole Dyantyi	Nuclear Project Management (NPM)

8. Revisions

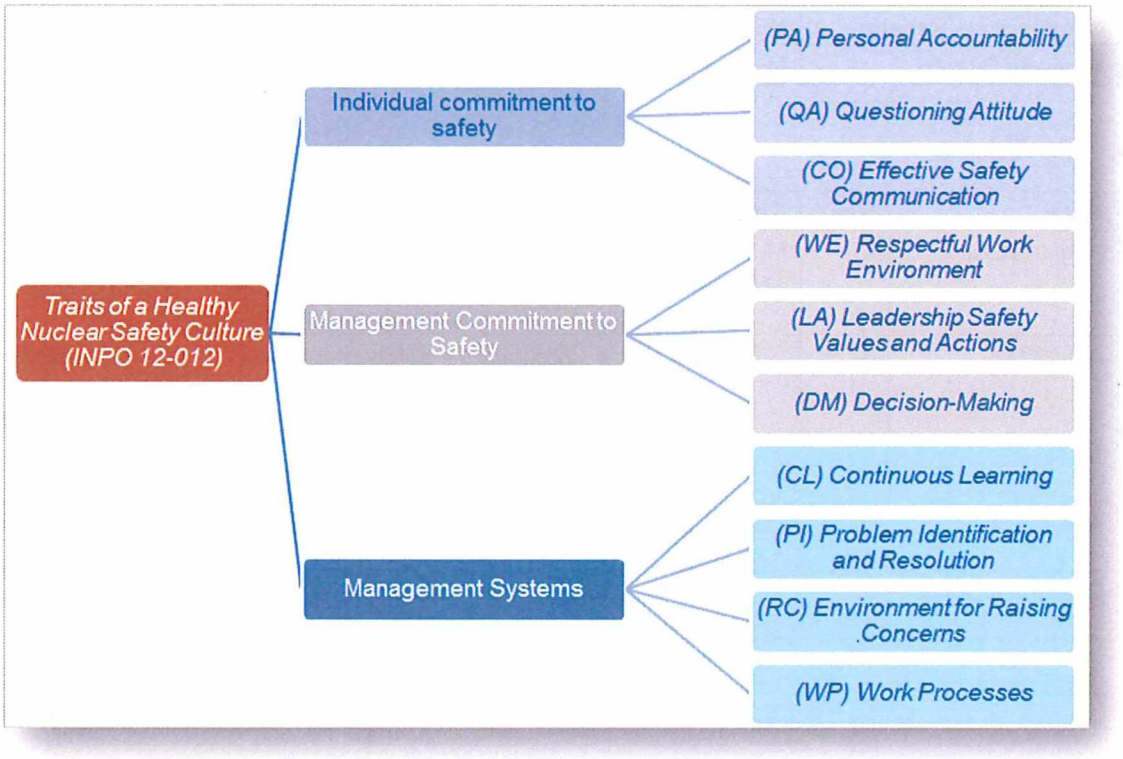
Date	Rev.	Compiler	Remarks
August 2022	4	M Tshivhilinge	• Scheduled annual review • Clarity on Safety Culture Enhancement Programme (SCEP) and safety culture enhancement plan
April 2019	3	C Robinson	• Integrate the safety management system key elements - IAEA GSR Part 2 Leadership and Management for Safety • Incorporate the objective of 238-173 (Human Performance Standard) • Incorporate the Nuclear safety Culture Framework
April 2017	2	C Robinson	Amended the document to reflect the expansion of the Nuclear Operating Unit
September 2013	1	J Kritzinger	First revision of Safety Culture Standard and converting the document from a KOU Standard to KOU Manual

Appendix A: Traits and Attributes of a Healthy Safety Culture

Nuclear safety culture is defined as: ***"the core values and behaviours resulting from a collective commitment by leaders and individuals to emphasise safety over competing goals to ensure protection of people and the environment."***

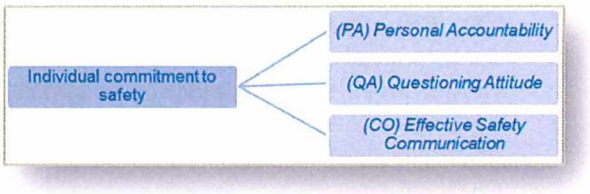
For the commercial nuclear power industry, nuclear safety remains the overriding priority. Although the same traits apply to radiological safety, industrial safety, security, and environmental safety, *nuclear safety is the first value adopted at a nuclear station and is never abandoned.*

(As adopted from INPO 12-012, Traits of Healthy Nuclear Safety Culture)



Nuclear safety is a collective responsibility. The concept of nuclear safety culture applies to every employee in the nuclear organisation, from the board of directors to the individual contributor. No one in the organisation is exempted from the obligation to ensure safety first.

1. INDIVIDUAL COMMITMENT TO SAFETY



PA. Personal Accountability: *All individuals take personal responsibility for safety. Responsibility and authority for nuclear safety are well defined and clearly understood. Reporting relationships, positional authority, and team responsibilities emphasise the overriding importance of nuclear safety.*

Attributes:

PA.1 Standards: Individuals understand the importance of adherence to nuclear standards. All levels of the organisation exercise accountability for shortfalls in meeting standards.

PA.2 Job Ownership: Individuals understand and demonstrate personal responsibility for the behaviours and work practices that support nuclear safety.

PA.3 Teamwork: Individuals and work groups communicate and coordinate their activities within and across organisational boundaries to ensure nuclear safety is maintained.

QA. Questioning Attitude*: Individuals avoid complacency and continuously challenge existing conditions and activities in order to identify discrepancies that might result in error or inappropriate action. All employees are watchful for assumptions, anomalies, values, conditions, or activities that can have an undesirable effect on plant safety.*

Attributes:

QA.1 Nuclear is Recognised as Special and Unique: Individuals understand that complex technologies can fail in unpredictable ways.

QA.2 Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding.

QA.3 Challenge Assumptions: Individuals challenge assumptions and offer opposing views when they think something is not correct.

QA.4 Avoid Complacency: Individuals recognise and plan for the possibility of mistakes, latent problems, and inherent risk, even while expecting successful outcomes.

CO. Effective Safety Communication: *Communications maintain a focus on safety. Safety communication is broad and includes plant-level communication, job-related communication, worker-level communication, equipment labelling, operating experience, and documentation. Leaders use formal and informal communication to convey the importance of safety. The flow of information up the organisation is considered to be as important as the flow of information down the organisation.*

Attributes:

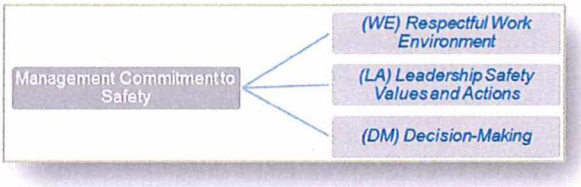
CO.1 Work Process Communications: Individuals incorporate safety communications in work activities.

CO.2 Bases for Decisions: Leaders ensure that the bases for operational and organisational decisions are communicated in a timely manner.

CO.3 Free Flow of Information: Individuals communicate openly and candidly, both up, down, and across the organisation and with oversight, audit, and regulatory organisations.

CO.4 Expectations: Leaders frequently communicate and reinforce the expectation that nuclear safety is the organisation's overriding priority.

2. MANAGEMENT COMMITMENT TO SAFETY



LA. Leadership Safety Values and Actions: *Leaders demonstrate a commitment to safety in their decisions and behaviours. Executive and senior managers are the leading advocates of nuclear safety and demonstrate their commitment both in word and action. The nuclear safety message is communicated frequently and consistently, occasionally as a stand-alone theme. Leaders throughout the nuclear organisation set an example for safety. Corporate policies emphasize the overriding importance of nuclear safety.*

Attributes

LA.1 Resources: Leaders ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety.

LA.2 Field Presence: Leaders are commonly seen in working areas of the plant observing, coaching, and reinforcing standards and expectations. Deviations from standards and expectations are corrected promptly.

LA.3 Incentives, Sanctions, and Rewards: Leaders ensure incentives, sanctions, and rewards are aligned with nuclear safety policies and reinforce behaviours and outcomes that reflect safety as the overriding priority.

LA.4 Strategic Commitment to Safety: Leaders ensure plant priorities are aligned to reflect nuclear safety as the overriding priority.

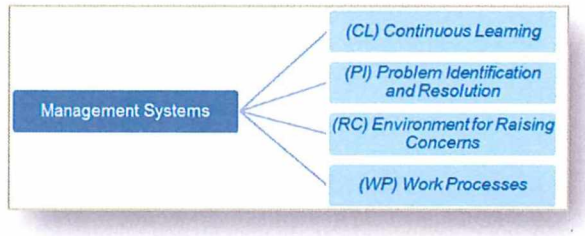
LA.5 Change Management: Leaders use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority.

LA.6 Roles, Responsibilities, and Authorities: Leaders clearly define roles, responsibilities, and authorities to ensure nuclear safety.

LA.7 Constant Examination: Leaders ensure that nuclear safety is constantly scrutinized through a variety of monitoring techniques, including assessments of nuclear safety culture.

LA.8 Leader Behaviours: Leaders exhibit behaviours that set the standard for safety.

DM. Decision-Making: *Decisions that support or affect nuclear safety are systematic, rigorous, and thorough. Operators are vested with the authority and understand the expectation, when faced with unexpected or uncertain conditions, to place the plant in a safe condition. Senior leaders support and reinforce conservative decisions.*



Attributes:

DM.1 Consistent Process: Individuals use a consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate.

DM.2 Conservative Bias: Individuals use decision-making practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop.

DM.3 Accountability for Decisions: Single-point accountability is maintained for nuclear safety decisions.

WE. Respectful Work Environment: *Trust and respect permeate the organisation. A high level of trust is established in the organisation, fostered, in part, through timely and accurate communication. Differing professional opinions are encouraged, discussed, and resolved in a timely manner. Employees are informed of steps taken in response to their concerns.*

Attributes:

WE.1 Respect is Evident: Everyone is treated with dignity and respect.

WE.2 Opinions are Valued: Individuals are encouraged to voice concerns, provide suggestions, and raise questions. Differing opinions are respected.

WE.3 High Level of Trust: Trust is fostered among individuals and work groups throughout the organisation.

WE.4 Conflict Resolution: Fair and objective methods are used to resolve conflicts.

3. MANAGEMENT SYSTEMS

CL. Continuous Learning: *Opportunities to learn about ways to ensure safety are sought out and implemented. Operating experience is highly valued, and the capacity to learn from experience is well developed. Training, self-assessments, and benchmarking are used to stimulate learning and improve performance. Nuclear safety is kept under constant scrutiny through a variety of monitoring techniques, some of which provide an independent "fresh look."*

Attributes:

CL.1 Operating Experience: The organisation systematically and effectively collects, evaluates, and implements relevant internal and external operating experience in a timely manner.

CL.2 Self-Assessment: The organisation routinely conducts self-critical and objective assessments of its programs and practices.

CL.3 Benchmarking: The organisation learns from other organisations to continuously improve knowledge, skills, and safety performance.

CL.4 Training: The organisation provides training and ensures knowledge transfer to maintain a knowledgeable, technically competent workforce and instil nuclear safety values.

PI. Problem Identification and Resolution: *Issues potentially impacting safety are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance. Identification and resolution of a broad spectrum of problems, including organisational issues, are used to strengthen safety and improve performance.*

Attributes:

PI.1 Identification: The organisation implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program.

PI.2 Evaluation: The organisation thoroughly evaluates problems to ensure that resolutions address causes and extents of conditions commensurate with their safety significance.

PI.3 Resolution: The organisation takes effective corrective actions to address issues in a timely manner commensurate with their safety significance.

PI.4 Trending: The organisation periodically analyses information from the corrective action program and other assessments in the aggregate to identify programmatic and common cause issues.

RC. Environment for Raising Concerns: *A safety-conscious work environment (SCWE) is maintained where personnel feel free to raise safety concerns without fear of retaliation, intimidation, harassment, or discrimination. The station creates, maintains, and evaluates policies and processes that allow personnel to raise concerns freely.*

Attributes:

RC.1 SCWE Policy: The organisation effectively implements a policy that supports individuals' rights and responsibilities to raise safety concerns and does not tolerate harassment, intimidation, retaliation, or discrimination for doing so.

RC.2 Alternate Process for Raising Concerns: The organisation effectively implements a process for raising and resolving concerns that is independent of line management influence. Safety issues may be raised in confidence and are resolved in a timely and effective manner.

WP. Work Processes: *The process of planning and controlling work activities is implemented so that safety is maintained. Work management is a deliberate process in which work is identified, selected, planned, scheduled, executed, closed, and critiqued. The entire organisation is involved in and fully supports the process.*

Attributes:

WP.1 Work Management: The organisation implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work.

WP.2 Design Margins: The organisation operates and maintains equipment within design margins. Margins are carefully guarded and changed only through a systematic and rigorous process. Special attention is placed on maintaining fission product barriers, defence-in-depth, and safety-related equipment.

WP.3 Documentation: The organisation creates and maintains complete, accurate, and up-to-date documentation.

WP.4 Procedure Adherence: Individuals follow processes, procedures, and work instructions.

Appendix B: Principles of Human Performance Excellence

Human Performance is based on five principles or underlying truths.

Excellence in human performance can only be realised when individuals at all levels of the organisation accept these principles and embrace the concepts and practices that support them.

Integrating these principles into management and leadership practices, worker practices, and the organisation's processes and values, will be instrumental in developing a working philosophy and implementing strategies for improving human performance within an organisation.

The Five Human Performance Principles

1. People are fallible, and even the best make mistakes;
2. Error-likely situations are predictable, manageable, and preventable;
3. Individual behaviour is influenced by organisational processes and values;
4. People achieve high levels of performance largely because of the encouragement and reinforcement received from leaders, peers, and subordinates; and
5. Events can be avoided through an understanding of the reasons behind errors and application of the lessons learned from past events (or errors).

Appendix C: Strategic Approach to Human Performance

The strategic approach to human performance is zero significant events caused by human error. This approach shall be achieved by working towards performance improvement focusing on individual behaviours and organisational factors.

Human Performance management strategy should address two primary challenges:

- Reduce the frequency of events by anticipating, preventing, and catching active errors at the job site.
- Minimize the severity of events by identifying and eliminating latent weaknesses that hinder the effectiveness of defences against active errors and their consequences.

$Re + Md \rightarrow \emptyset E$

Reducing active errors (Re) and managing defences (Md) leads to zero significant events(ØE).