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Mr. Brian Torrie
Director General, Regulatory Policy Directorate
Canadian Nuclear Safety Commission

Dear Mr. Torrie:

<u>Comments on Draft REGDOC-2.1.2: Safety Culture</u>

The purpose of this letter is to provide Ontario Power Generation's (OPG) comments on CNSC Draft REGDOC -2.1.2, "Safety Culture."

OPG agrees that licensees need to foster a healthy safety culture within their organizations, including developing a Nuclear Safety Policy that sets the overriding priority for a strong Nuclear Safety Culture. In addition, OPG supports the need to conduct self assessments, scaled to the size of the organization and nature of the industry, in order to assess the organizational behaviors linked to a healthy safety culture. OPG also remains open to have the CNSC review the high level summary report and action plans resulting from these assessments.

We have reviewed the draft REGDOC-2.1.2 in consultation with industry partners. Attachment 1 contains a set of comments that OPG has chosen to provide after the consultation with industry partners. OPG has the following specific comments related to the three proposed **Requirements**:

1. ***licensees shall document their commitment to fostering safety culture in their governing documentation***
   - OPG supports and currently demonstrates this requirement, however further clarification is needed as it relates to all areas of safety and security. OPG believes that Nuclear Safety is the overriding priority for nuclear power plants; the draft regulatory document is silent on this point. Further consultation is required in order to understand the commission's intent related to all areas of safety culture including what is meant by security culture.

2. ***licensees shall conduct comprehensive safety culture assessments that are empirical, valid, practical and functional***
   - OPG endorses the requirement to conduct rigorous, periodic nuclear safety culture assessments and believe we currently meet this requirement. However, there are some aspects of the Guidance that if required or expected as written would increase burden on the organization and change our current assessment methodology without a commensurate increase in safety. Examples are provided in Attachment 1. The current framework that OPG uses, which is an industry standard model, was developed after years of learning and benchmarking and aligns to our current

leadership tools and management system. We would be remiss if we were to just dismiss all of this learning for a new framework that does not align with the nuclear industry best practice. We also believe that 'one size does not fit all' and that recommending one framework with safety culture attributes does not allow different types of nuclear licensees to use the best framework adapted for their safety risk areas. As an example, having nuclear safety the overriding priority would not fit the medical industry where patient safety is paramount. In summary, the REGDOC should not be prescriptive as to the framework to be used. If CNSC chooses to propose a framework, the REGDOC should be clear that licensees may choose to use it but are not required to.

➤ Assuming safety culture can be measured once and then have future progress compared against an established baseline is not a practical approach. Although changes in culture can be discerned over time and insights as a result of those changes can identify changing areas of focus for leadership attention, it is not feasible to measure culture in empirical, absolute and comparable terms. Nuclear Safety Culture can be discerned using qualitative assessment tools, but it is best to gauge progress through leadership experience and insights, as opposed to trying to measure absolute quantifiable changes. The most important focus of safety culture assessments should be to obtain valid and descriptive insights about strengths and weaknesses and a sense of what is changing, along with its magnitude (qualitative) and direction. It is important to note that the focus on safety culture assessments should be to improve safety outcomes, rather than such a higher emphasis on empirical reproducible accuracy of measurement.

3. *upon completion of a safety culture assessment, the licensees shall prepare a summary report for submission to the CNSC*
   ➤ OPG remains open to have the CNSC review the summary report and action plan and the CNSC have been invited to participate in the training of staff involved in assessments. However, OPG has significant concern with the detailed findings being taken out of context if they become available to the public or other stakeholders and believe this concern could hinder our ability to continue to receive open and honest input from our employees during the assessment process. There is a risk that by sharing our detailed information, we would erode trust with our employees. Additionally, it is helpful to the leadership team to look at the raw data and analyze it. If OPG was required to share this information widely, we believe this could cause a 'chilling effect' on the willingness of employees to speak openly without fear of having a negative impact on the nuclear program, and ultimately lower the value of the assessment in contributing to valid improvement plan actions to improve safety.
   ➤ There is a level of implied prescription in the guidance on the contents of the 'overview of assessment results' which includes 'a description of the data and analysis for each finding'. This aspect of the requirement will require significant consultation.
   ➤ The description of improvement plan information contained in the guidance is also prescriptive and not very clear. For example 'improvement plans should discuss how the assessment findings are integrated with safety culture monitoring activities and the organization's processes and practices to improve safety.'

OPG has the following specific comments related to the proposed **Guidance**:

OPG believes the Guidance has a degree of detail and prescription that will require significant clarification and is unnecessary given the maturity of the current assessment process used at OPG. A review of the impact of the guidance on OPG is summarized below, however OPG will need clarification on what "should" means throughout this draft regulatory document as this will determine our level of concern with the following 4 points.

1. *provide a reference framework for safety culture to assist licensees in demonstrating a commitment to safety*
   ➢ The CNSC Assessment framework states "*Licensees should ensure that the safety culture assessment framework is mapped against the five safety culture characteristics (section 2 of the document), and is used at all stages of the assessment process*". OPG does not believe that changing our current framework to align with the proposed CNSC framework will improve Safety Culture at this time. A mapping of the CNSC Framework to the 10 Traits is provided in Attachment 2 and shows some attributes missing from the CNSC framework that we believe are important for ensuring a healthy nuclear safety culture.
   ➢ OPG does not support adding security culture to our framework at this time when we need significant operational focus, and we believe it will add a greater burden to OPG without a commensurate safety improvement. OPG believes that this new topic of Security Culture is immature and requires further consultation before requirements are established. OPG requests significant time before Nuclear Safety Culture and Security Culture are integrated to allow time to learn more about the industry developments in this area, which traits of a security culture are most important to measure, and to plan for their future integration with our employee education and self assessment methodology.

2. *provide guidance on the characteristics of a healthy safety culture and assessment methodologies*
   ➢ OPG believes that the CNSC should set expectations for an assessment process, and for periodic validation that the process a licensee uses is adequately capturing the culture of the organization, but not define the timeframe or methodologies to be applied. The CNSC should allow for creativity in its licensees and encourage continuous improvement, including in the area of cultural assessment, rather than tying licensees to a particular methodology.
   ➢ The guidance in section 2 is too prescriptive with respect to the framework mapping and the expectation in section 3 to conduct assessments that are 'empirical, valid, practical and functional' at least every 3 years. The additional effort that would be required from licensees to demonstrate our current Nuclear Safety Culture Assessments meet this guidance would detract from the higher priority tasks it takes to implement and foster a healthy nuclear safety culture.

3. *clarify the steps for conducting safety culture self-assessments, to help licensees conduct assessments effectively*
   ➢ OPG feels that sharing security information, even in a broad sense, would not only expose vulnerabilities, but could also result in panic or confusion in the public domain sensationalized by the media. It is noted on page 9 however that "some expectations differ from a safety culture assessment, in areas such as information sharing and

communications." It is not clear what the CNSC is willing to consider as acceptable differences.

➢ When looking at the Maturity Model, it is difficult to see how this is an empirical method of measurement. We believe it would be difficult to prove with evidence where we fall on the model, and given that every organisation has sub-cultures within its culture, it is difficult to understand how it would be applied at the organisational level. We would need to clarify what data would be expected to support each element of the model and what value this gives to improving safety culture. Driving strict compliance to this model could cause unintended consequences such as lowering our own standards while possibly letting other things go by unnoticed because they are not part of this model. Additionally, this model does not easily tie back to the framework the CNSC proposed.

4. **ensure that the organization is responsive to results of safety culture self-assessments**

➢ The document suggests that improvements following an assessment will lead to improvements in established policies and procedures. OPG believes that not many improvements will be changes in policy and procedures. Also, it would be difficult to explicitly describe expected results from corrective actions created to address findings as suggested by the regulatory document. OPG does ensure that the rigor and complexity of the actions taken as a result of findings are commensurate with risk to the organization.

In conclusion, OPG reaffirms its commitment to fostering a healthy safety culture, including undertaking assessment activities to understand changes to culture over time and to guide efforts at influencing culture in a way which ensures nuclear safety is always given the priority it deserves. In summary, OPG's most significant comments are:

- the inclusion of Security culture assessment is pre-mature at this time;
- the need for flexibility for licensees to use established safety culture framework;
- we believe there is a problem with the CNSC assumption that safety culture can be measured in such an empirical quantitative way, and that assumes it is possible to compare between licensees and against previous assessments in a quantitative way;
- the concern with a requirement to provide CNSC, and external stakeholders, with summary reports on the assessments.

If you require further information or have any questions regarding this submission, please contact Mrs. Aileen Sullivan, Director, Fleet Performance Improvement at (905)-839-6746, ext. 5249.

Yours sincerely,
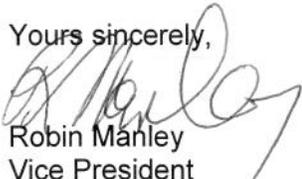
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Attach.
1. Rollup of Industry Comments on REGDOC-2.1.2 Safety Culture
2. Mapping of Reg Doc Framework to INPO's 10 Traits of a Healthy Nuclear Safety Culture

Industry comments on REGDOC-2.1.2, Safety Culture

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
REQUEST FOR INFORMATION on the proposed implementation of REGDOC-2.1.2, *Safety Culture*				
1.	Neither this document nor the draft REGDOC itself are clear on how they will apply to non-NPPs. Section 3 of the Request for Information, under Objectives, says this draft REGDOC "applies to all licensees: it sets requirements and guidance for licensees of Class I nuclear facilities and uranium mines and mills, and provides guidance to all other licensees. The following three requirements support this objective: • licensees shall document their commitment to fostering safety culture in their governing documentation • licensees shall conduct comprehensive safety culture assessments that are empirical, valid, practical and functional • upon completion of a safety culture assessment, the licensees shall prepare a summary report for submission to the CNSC This is written as if all sections are required for all licensees, though points 2 and point 3 are requirements for NPP's and guidance provided for all other facilities.	Modify to clearly delineate requirements for different facility types. The CNSC should have a very clear graded approach to implementation of this REGDOC for different types of licensees	**Major**	Undue burden on facilities to try and understand the intent of regulator or to justify a partial implementation of processes to meet this regulatory document. See comment below.
2.	Under Section 4, Regulatory Approach, this draft says, "The requirements and guidance for safety culture assessments are intended for nuclear power plants" which is an unclear explanation of which requirements and guidance apply to different facilities. In other parts of this Request for Information and the draft REGDOC itself, the wording suggests all facilities should develop processes to the same degree as the NPPs.	The CNSC should develop a crystal clear, graded approach to how this, and all other REGDOCS, are implemented and regulated for different types of facilities so all licensees can fully understand their requirements.	**Major**	As currently written, these documents could result in major, undue harm to smaller facilities (non-NPPs) where requirements are unclear. Many thousands/millions of dollars could be spent trying to rationalize processes as acceptable or to address action notices where facilities did not understand the requirements (or a CNSC inspector incorrectly determined noncompliance with the requirements).

Industry comments on REGDOC-2.1.2, Safety Culture

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3.	In Section 5, Potential Impacts, CNSC staff erroneously note, "The requirement to provide a summary report of safety culture assessments may result in a modest administrative burden on nuclear power licensees." This is contrary to the Cabinet directive on Regulatory Management and the Red Tape Reduction Act and the One-for-One rule, since there does not appear to be any administrative burden being removed from licensees.	Licensees strongly urge the CNSC to follow the Cabinet directive and the intent of the One-for-One rule.	**Major**	There continue to be an increasing number of administrative burdens placed on licensees through REGDOCs without any relief via the Red Tape Reduction Act and the One-for-One rule. These administrative burdens generally have no nuclear safety benefit, but increase costs to licensees which are passed on to ratepayers. From the Government of Canada website (http://www.tbs-sct.gc.ca/hgw-cgf/priorities-priorites/rtrap-parfa/ofo-upu-eng.asp): "When a new or amended regulation increases the administrative burden on business, regulators are required to offset – from their existing regulations – an equal amount of administrative burden cost on business." Since the CNSC is using REGDOCs instead of regulations to implement new Regulatory Requirements, they are not following the one-for-one rule, which is inappropriate. This is resulting in hundreds of thousands of dollars of administrative burden being added to the licensees each year for this and other REGDOCs.
	REGDOC-2.1.2 – SAFETY CULTURE			
	GENERAL			
4.	**Intent**: Could the CNSC please clarify the driver or purpose of the regulation for Class I Nuclear Facilities, which the CNSC acknowledges already do what is expected with regard to safety culture assessments? Is the intent of this REGDOC to be a method of measurement of safety culture or a method of		*Question for Clarification*	

Industry comments on REGDOC-2.1.2, Safety Culture

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	improvement?			
5.	Why does the CNSC believe it necessary to include such level of detail in the guidance when it appears the requirements largely apply only to the NPPs, which already have detailed practices and processes?		*Question for Clarification*	
6.	Could you please clarify what "should" means throughout the draft regulatory document, specifically under the guidance sections?		*Question for Clarification*	
7.	What activities will the CNSC conduct to ensure compliance with the REGDOC? What additional activities will licensees need to perform to meet the requirements in this draft beyond those the CNSC has already observed from existing assessments?		*Question for Clarification*	
PREFACE				
8.	The statement, "Licensees are expected to review and consider guidance; should they choose not to follow it, they should explain how their chosen alternate approach meets regulatory requirements" is not reasonable. Guidance is meant to be guidance, if the licensee is required to meet guidance criteria, then it is a requirement, not guidance.	Revise wording to: "Licensees are expected to review and consider guidance; should they choose not to follow it, they should explain how their chosen alternate approach meets regulatory requirements."	**Major**	Licensees note that a similar statement appears in all REGDOCs, which puts an unreasonable onus on licensees to demonstrate not only how requirements are met, but also how guidance is met. Guidance is meant to be guidance. If a licensee is required to meet guidance criteria (even by other means), then it is a requirement, not guidance.
9.	Some licensee types have no requirements for this document, only guidance. However, the preface suggests all licensees must follow guidance or justify why they do not. Section 1.2 then discusses how Section 3 and 4 are intended only for nuclear power plants, yet all licensees must consider how they will address, use a graded approach, or justify a different approach for the guidance in these sections.	This draft should be revised to clearly lay out requirements for all facilities, including what the requirements are for a given section in Table A1 on Page 13 when it lists a facility type as 'G'. In future drafts, licensees urge the CNCS to clearly describe its expectations for how "prudent management practices" should be addressed.		Potentially significant financial and administrative burdens could be placed on smaller facilities to interpret expectations, create arguments for a graded approach and justify the processes that are used or implemented as a result of this document. Undue hardship could result from failure to understand requirements. Disagreements between licensees and the regulator regarding interpretations could lead to

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				regulatory actions taken against the licensee, which would negatively affect the perception of their businesses with the regulator and the public in terms of perceived safety performance.
10.	Referring to existing facilities, the draft says, "The requirements contained in this document do not apply unless they have been included, in whole or in part in the licence or licensing basis." What is the intent of this statement? Can it be interpreted that this REGDOC applies or does not apply to existing facilities? Does this mean it only applies after relicensing changes? It this applicable to Nuclear Waste facilities?		*Request for clarification*	
SECTION 1 – INTRODUCTION				
CNSC Objective: *To establish a common understanding of what constitutes a healthy safety culture and the importance of fostering safety culture in a licensee's organization*				
11.	The proposed CNSC definition of safety culture is technically sound in that it conveys a neutral stance to culture and can be either positive or negative in promoting certain outcomes. However, it differs from that of the various definitions industry uses and varies slightly between the Introduction and the Glossary. Was this intentional and can the definitions used by the industry continue? Where did the CNSC's proposed definition come from? As written, the definition in this paper is less useful as a communications tool to promote the importance of having a positive safety culture. The WANO/INPO (2012) and the IAEA (2006) definitions are more effective in this regard and would help give a sense to a workforce that safety takes precedence over competing goals. The CNSC's proposed definition also emphasizes a perception - 'the importance that the licensee places on safety' - rather than an attitude towards the importance of safety in	Licensees suggest the CNSC adopt an existing, accepted international standard definition such as the IAEA o*r* WANO/INPO definition of nuclear safety culture, which says: *"Nuclear Safety Culture is defined as the core values and behaviours resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment."*	**Major**	Adopting an existing, internationally-recognized definition would help foster a common international understanding of nuclear safety culture.

Industry comments on REGDOC-2.1.2, Safety Culture

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	the workspace throughout a licensee's organization and the role licensees play in promoting safety, safe practices, etc.			
12.	The document makes no specific mention of 'nuclear safety culture,' opting instead for the more generic 'safety culture.' Without specifying 'nuclear,' the document does not recognize the industry's unique nature or that safety culture, in a nuclear context, has an enhanced focus beyond industrial or occupational safety.	Licensees urge the CNSC to add 'nuclear' to all references of safety culture. For additional clarity, industry suggests the document be amended as follows: In Section 1, Introduction, Para 1, Add: "For further certainty, it is expected that licensees ensure management and workers understand the higher-level obligations for nuclear safety over that of a conventional work environment." In keeping with industry's recommendation to remove references to nuclear security culture at this time (see comment #16) , delete the final line of the Introduction, which says, "In this document, "safety culture" denotes safety culture and security culture collectively, except where a distinction is made."	**Major**	This document will be read and interpreted by members of the public who may not have a full awareness of the special and unique aspects of nuclear. Given this, the language must be particularly clear and not combine or confuse terminologies. Readers must understand that safety matters being discussed are not explicit to conventional safety, which could lead to misinterpretation of other Acts and regulations pertaining to occupational safety matters. Without a clear emphasis on nuclear safety culture, results of assessments could also be overly focused on conventional safety.
13.	Shaping and influencing culture is primarily an act of leadership, not workers. However, the introduction of this draft indicates all workers have a shared responsibility to ensure a healthy safety culture is a priority. While this may be true in principle, in practice a healthy culture is fostered when leadership makes it a priority. Workers do not always have the means or ability to ensure a healthy nuclear safety culture is a corporate priority or to influence values and rules or the importance placed on safety by the licensee.	Industry suggests emphasizing how leadership, not workers, shape culture in future drafts of this REGDOC.	**Major**	As currently written, this creates confusion as to the meaning of nuclear safety culture
14.	Point #3 under section 1 says, "Safety culture is complex and *constantly changing*." However, licensees believe the CNSC more accurately describes this sentiment in the third paragraph of page 10 when it says nuclear	Rewrite the point to say, "Safety culture is complex and ~~constantly changing~~ changes over time."	**Major**	As currently written, the phrase 'constantly changing' might erroneously equate to 'constant monitoring', which would add an administrative burden to licensees with no

Industry comments on REGDOC-2.1.2, Safety Culture

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	"safety culture can *change over time* …"			appreciable impact on nuclear safety culture.
Section 1.3 Relevant Legislation				
15.	Relevant legislation also includes the Nuclear Non-Proliferation Import and Export Controls Regulations (NNIECR).	Add paragraphs 1(1), (2), (3) and (4) of the NNIECR: 1 (1) The definitions in this subsection apply in these Regulations. *Act* means the Nuclear Safety and Control Act *Controlled nuclear equipment* means the controlled nuclear equipment and the parts and components for controlled nuclear equipment referred to in the schedule. *Controlled nuclear information* means the controlled nuclear information referred to in the schedule. *Controlled nuclear substance* means a controlled nuclear substance referred to in the schedule. *Transit* means the process of being transported through Canada after being imported into and before being exported from Canada, in a situation where the place of initial loading and the final destination are outside Canada. (transit) (2) All controlled nuclear substances are prescribed as nuclear substances for the purpose of paragraph (d) of the definition nuclear substance in section 2 of the Act, with respect to the import and export of those substances. (3) All controlled nuclear equipment is prescribed equipment for the purposes of the Act, with respect to the import and export of that equipment. (4) All controlled nuclear information is prescribed information for the purposes of the Act, with respect to the import and export of that information, unless it is made public in accordance with the Act, the regulations made under the Act or a licence.	**Major**	The draft is incomplete and does not address relevant essential regulations essential for the implementation of this proposed REGDOC.

Industry comments on REGDOC-2.1.2, Safety Culture

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Section 1.4.1 Security Culture				
16.	Nuclear safety culture and nuclear security culture have important differences and the models require maturation before mandating integration. This draft cites a number of IAEA documents related to nuclear security. However, the IAEA has not yet published any guidance on nuclear security culture, including frameworks and assessment methodologies, although collaborative international efforts are underway to define them. While licensees are proactively exploring ways to assess aspects of nuclear security culture using draft IAEA documents and industry expertise, it is simply premature to introduce security culture into this draft REGDOC. The industry has had 30 years to develop a common language, common understanding and to mature the frameworks and assessment methodologies for safety culture, whereas similar concepts for security culture are in their infancy. Why does the CNSC believe the IAEA security culture requirements, which remain in development and are not well-established or understood, need to be blended into a very mature, well-established nuclear safety culture framework at this time? While there is some overlap at a very high-level between nuclear safety culture and nuclear security culture, they have fundamentally different basis and origins. As the IAEA Nuclear Security Culture Implementing Guide (2012) says, "*...both nuclear safety and nuclear security consider the risk of inadvertent human error, nuclear security places additional emphasis on deliberate acts that are intended to cause*	Licensees strongly encourage the CNSC to remove references to nuclear security culture from this draft until industry-wide efforts in this area are more advanced.	**Major**	Prematurely introducing requirements into a regulatory document could inadvertently, but effectively, stifle the collaboration and industry-wide learning necessary to mature the topic.

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	harm. Because security deals with deliberate acts, security culture requires different attitudes and behaviour, such as confidentiality of information and efforts to deter malicious acts, as compared with safety culture.			
	Even within this draft, the relationship between nuclear safety culture and nuclear security culture is described inconsistently: *- 'Security culture is a major component of safety culture' (Introduction, Para 5);* *- 'Safety culture and security culture coexist and reinforce one another' (Introduction, paragraph 6);* *- '…healthy safety and security cultures have similar characteristics and indicators' (page 5, paragraph 4).*			
17.	The second sentence in Section 1.4.1 does not explicitly consider the need to provide greater assurance of preventing, detecting, delaying and responding to theft, unauthorized access, illegal transfer, or other malicious acts involving prescribed information or prescribed equipment in use, storage, or transfer. Also, the term nuclear substance should be used, rather than radioactive material.	Change second sentence in Section 1.4.1 to read: "This will provide greater assurance of preventing, detecting, delaying and responding to theft, sabotage, unauthorized access, illegal transfer, or other malicious acts involving a nuclear substance, prescribed equipment or prescribed information in use, storage, or transport."	**Major**	As written, the draft regulation is clear that nuclear security envelopes nuclear safety through the addition of the additional attribute (i.e., matters identified in *). In this regard, however, the draft regulation must be enhanced to the level of required continuity in use of language as that found in the family of the other Regulations and Acts.
SECTION 2 – FOSTERING SAFETY CULTURE				
CNSC REQUIREMENT - *Licensees shall document their commitment to fostering safety culture in their governing documentation.*				
18.	Licensee's management systems already document their commitment to nuclear safety. The expectation of this draft REGDOC is established in licences through the application of CSA N286. Licensees are transitioning to, or implementing, N286-12, whose Principle 1 states, "Safety is the paramount consideration guiding decisions and actions" and Clause 4.2 states, "Management shall use the management system to	Licensees encourage the CNSC to deemphasize the link between documentation and fostering a nuclear safety culture in future drafts of this REGDOC.	**Major**	Although governing documentation should include a statement of commitment making safety the overriding priority, and forming a basis for promoting a healthy nuclear safety culture, it is not through documentation that culture will be influenced. Rather, it is leadership decisions, words and actions that shape culture. To overemphasize the role of

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	understand and promote a safety culture by: (a) issuing a statement committing workers to adhere to the management system; (b) defining and implementing practices that contribute to excellence in worker performance; (c) providing a means by which the business supports workers in carrying out their tasks safely and successfully, by taking into account the interactions between individuals, technology and the organization; and (d) monitoring to understand and improve the culture			documentation is counterproductive since it will influence a culture that relies too heavily on established, written rules.
19.	Under guidance, the proposed safety culture reference framework is overly rigid and prescriptive. As currently written, this draft: 1) Utilizes characteristics which are not aligned to the 10 WANO/INPO Traits of a Healthy Nuclear Safety Culture currently used by many licensees. For instance, it refers to "questioning attitude," which in the traits includes "recognizing nuclear as special and unique." However, there is no characteristic in this REGDOC that supports this recognition. 2) Implies an expectation that licensees must, if not actually adopt the framework, at least explicitly address the details in the CNSC list. This interpretation is supported later in this draft by the final line of page 9, which says, "The licensee should be able to demonstrate that each characteristic in the CNSC's safety culture reference framework is clearly and effectively addressed."	In subsequent drafts of this REGDOC, licensee's encourage the CNSC to: 1) Align the framework with the familiar, industry-accepted WANO/INPO traits and make it very clear this is simply an example framework that could be used to help licensees develop their own framework. This is already supported somewhat in the text by the phrase that calls the framework a "reference … for demonstrating a commitment to safety…" 2) State that licensee should have a detailed framework, but not require them to cover all the detailed points listed by the CNSC.	**Major**	Misalignment with the WANO/INPO traits will create an additional, non-value added burden to licensees rather than build on industry's current strengths in nuclear safety culture assessment. In addition, compelling licensees to use and/or address detailed safety culture characteristics that are currently listed in the CNSC framework but of limited applicability to their particular situation would only weaken the long-term viability of assessments.
20.	While industry believes it is premature to include nuclear security culture in this REGDOC, licensees	Licensees urge the CNSC to remove references to nuclear security culture from this draft until industry-	**Major**	To enhance safety, culture for security support across an organization is important,

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	clearly recognize the need for healthy nuclear security and nuclear safety cultures. However, other than the phrase, "Everyone understands that a credible threat to security exists..." listed on page 4, the security indicators do not seem to reflect a characteristic specific to security.	wide efforts in this area are complete. When cultural values are listed in any eventual guidance to help licensees develop their own frameworks, it would be helpful to include/create security-specific characteristics with security-specific indicators to accompany this REGDOC.		and this may differ from the characteristics specific to parts of the licensee which are security-specific organizations.
21.	The reference framework noted in section 2 says, "Everyone understands..." throughout the section. It is difficult to measure, "Everyone's understanding"	Suggest it say, "Workers understand" to make it less prescriptive.	Minor	

SECTION 3 – SAFETY CULTURE ASSESSMENTS

CNSC Requirement: *Licensees shall conduct comprehensive safety culture assessments that are empirical, valid, practical and functional. Safety culture assessments shall be conducted at least every three years.*

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22.	The proposed requirement, when combined with the recommended guidance in this section, could potentially undermine the health of nuclear safety culture. As currently written, it will mandate an exercise which is concerned primarily with the gathering and analysis of data rather than fostering a process of self-discovery and reflection, supported by innovation in methodology, sharing experience and engaging leaders in the creative act of fostering a healthy nuclear safety culture over the entire lifecycle of an organization. This initial draft has a limited view of nuclear safety culture assessment. Culture may be assessed through any number of means, including surveys, external reviews, performance metric analysis, event analysis, etc. Yet the proposed approach is rigid and emphasizes a cookie-cutter method against a static framework to ease comparability, using phrases like: *observable facts; logical analysis; clear interpretation; comparative analysis over time; analysis is defensible and replicable; structure; validated, etc.* In reality, culture is an act of	Licensees strongly believe the CNSC does not need to define how safety culture assessment is to be performed. That should be left to the discretion of the licensee, which may approach the assessment in a manner best suited to their own culture, operations and location. If guidance is offered in subsequent drafts, licensees urge the CNSC to deemphasize the restrictive and empirical nature of a nuclear safety culture assessment to protect the integrity of the assessments themselves.	Major	The restrictive and empirical underpinning of the regulatory expectations overemphasize the survey aspect of the assessment and could wrongly give an impression that culture is measurable from a quantitative perspective, rather than recognizing there is a significant qualitative or insight-driven aspect to the assessment. It risks the unintended consequence of undermining efforts to foster a healthy nuclear safety culture. It removes the desire from licensees to apply their creativity and identify assessment and improvement opportunities best suited to their unique organizations.

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	discernment, with the development of insights influenced by history and context. Direct comparison from one period to the next, or one licensee to the next, is ill advised and can be misleading. For example, a reduction in results in the survey tool could be the result of a healthier, more self-critical organizational culture, rather than a decline in commitment to safety.			
23.	What is the rationale for the prescriptive nature of the requirement for the safety culture assessments to be empirical, valid, practical and functional as described in the guidance?		*Request for clarification*	
24.	Is the methodology being used in Class 1 facilities appropriate for smaller licensees? What benchmarking was done to address the methodology for smaller licensees?		*Request for clarification*	
25.	The requirement that, "Safety culture assessments shall be conducted at least every three years" is overly restrictive without reason. It is suggested that some flexibility be built into this section to allow for business needs to be considered in the planning process.	Revise wording to: "Safety culture assessments should nominally be conducted every three years and shall be conducted at least once every five years."	**Major**	Licensees require flexibility and discretion to properly plan assessments. These are large projects which impact a licensee's business plan. Industry agrees that a 3-year cycle is nominal, but suggests some flexibility out to 5 years and some latitude with regard to scope, since an assessment for an entire organization may not always be required within that time frame. This is with the understanding that licensees are constantly evaluating safety culture through other means (i.e. corrective action processes, safety culture monitoring panels, daily leadership meetings, etc.)
26.	While the requirement says assessments **shall** be conducted at least every three years, the guidance indicates that, "Organizations engaged in complex work involving many interdependent workers and processes		*Request for Clarification*	

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
	will benefit from comprehensive monitoring, which **can** include safety culture assessments." The 1st statement says assessments are mandatory, which seems to contradict the 2nd statement saying that safety culture assessments are an optional part of comprehensive monitoring.			
27.	Why was this framework chosen over other proven frameworks that exist in the nuclear industry?		*Request for Clarification*	
28.	How does the CNSC plan to address changes resulting from international efforts between INPO/WANO, IAEA and the CNSC, when they are issued as a new common language framework later in 2017? What does the CNSC expect licences to do differently given they use the INPO Traits and Attributes that do not map explicitly to the CNSC's framework?		*Request for Clarification*	
29.	The statement, "the chosen assessment method and associated safety culture framework" implies that licensees can use a safety culture framework different from the one described in Section 2. Please clarify whether the continued use of the INPO model without revision meets the requirements?		*Request for Clarification*	
30.	On Page 6, what is the meaning of the bullet, "Managers do not abuse authority to circumvent security*" as part of the safety culture framework?		*Request for Clarification*	
Section 3.1 – Objectives applicable to safety culture assessment methods				
31.	**Empirical** – Industry has concerns with the 2nd and 3rd bullets and the need for clarification of the 4th bullet point. How is it possible to make a nuclear safety culture assessment replicable? As written, it could be interpreted that the CNSC expects licensees to provide all information collected. How are observations objective? To what extent would licensees have to use a method that uses objective observations?	Remove 2nd and 3rd bullet points and clarify the 4th.	**Major**	Regarding the 2nd bullet point, industry does not want the information to be replicable to protect integrity of the assessments and the privacy of its participants. Licensees will not keep assessment data to assure workers it will be not used improperly or perceived to be held against them in any way.

Industry comments on REGDOC-2.1.2, Safety Culture

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
	Regarding the 4th bullet point, are the words **cultural characteristics/traits** being used in a general sense? It seems there is some flexibility here as to use the WANO/INPO Traits of a Healthy Nuclear Safety Culture rather than the culture characteristics. Does the word **range**, mean that every cultural characteristic/trait is to be assessed?			
32.	**Practical,** - Industry has questions around the meaning of the 1st bullet: "Information obtained from the assessment method is clearly recorded to allow logical analysis." Similar to the comment above, this could indicate the CNSC expects all information from the assessment to be recorded and provided to CNSC. Is this the intent? For the 2nd bullet, what is meant by demographics? Is it necessary, and is there value added, to collect demographic information? Why do licensees need to include job position? The current wording threatens the anonymity of the responses.		*Request for Clarification*	
33.	**Functional** – Industry has concerns with the phrase "observable facts" in the 1st bullet. What is meant by the 2nd bullet, which says, "The assessment yields relevant, actionable information"? Does the assessment also need to have actions?	Replace the phrase "observable facts" with "based on observations and perceptions" in the 1st bullet and clarify the 2nd bullet.	**Major**	Industry relies heavily on the perceptions of workers who participate in assessment surveys and discuss nuclear safety culture with interview teams. Changing the assessment methodology from what licensees in both Canadian and US facilities currently and effectively use would require significant additional effort without a corresponding benefit to nuclear safety. Observable facts are more of a continuous monitoring data-gathering technique and not applied extensively during the three-year assessment.

Industry comments on REGDOC-2.1.2, Safety Culture

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
3.2 Communications Strategy				
34.	Licensees should not be expected to share information from a safety culture assessment with the public to protect the integrity of assessments and the privacy of their participants. Licensees need the freedom to be harshly critical of themselves to drive continuous improvement. Compelling public communication of results will inadvertently pressure licensees to ensure positive assessments through the setting of lower expectations.	Licensees urge the CNSC to remove any references or implied requirements to communicate nuclear security assessment results with external stakeholders. How licensees opt to communicate their assessments should be a matter of choice in line with their existing communication strategies, which makes this guidance unnecessary.	**Major**	To be useful, nuclear safety culture assessments need to be open and expressed in language understood by licensees in the context of their internal business practices. Assessments need to be unfiltered so leadership can reflect upon and take actions on internal issues. Findings are based on the perceptions of workers steeped in the nuclear culture of being extremely self-critical, which is vital to continuous improvement but easily misinterpreted by those unfamiliar with the industry. There is significant danger that results would be misunderstood by the public and generate unwarranted angst without extensive education, which is not practical. External sharing of even high-level summaries creates the potential to sanitize reporting and ultimately lower the overall impact on nuclear safety.
35.	Paragraph 4, 3rd bullet, can the CNSC clarify what is meant by "contractors"? Licensees utilize contractors in various forms and require clarity to ensure there is no misunderstanding as to the extent of application to third parties who support the licensee.		*Request for clarification*	.
36.	This draft acknowledges that "for security culture, the communications plan must consider that some information is security sensitive" but also says "for the benefit of greater awareness, all aspects should be shared broadly even if this requires some incidents or	Licensees urge the CNSC to remove the statement from future drafts or, at a minimum, add the words "to the extent possible" to the statement.	**Major**	Sharing security information even in a broad sense would not only expose vulnerabilities, but could also result in public angst if improperly characterized. It is noted on Page 9 that "some expectations differ from a

Please identify whether the comment is a major comment or a request for clarification

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Industry comments on REGDOC-2.1.2, Safety Culture

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
	lessons learned to be generalized."			safety culture assessment, in areas such as information sharing and communications." It is not clear what the CNSC is willing to consider different.
Section 3.3 Preparing for the safety culture assessment				
37.	The CNSC is providing inconsistent information as to what constitutes a nuclear safety culture assessment. Although licensees may use formal assessments tools described in section 3.3, this is not the only means of assessing the culture of the organization, which appears to be recognized in section 3.4. Licensees should be encouraged to review their performance and culture on an ongoing basis, respond to changes in metrics and positive and negative events, both internal and external.	Remove Section 3.3. Section 3.4 provides sufficient direction for licensees to perform assessments.	**Major**	By defining a nuclear safety culture assessment in such a prescribed manner, the CNSC is hindering licensee's flexibility to meet expectations.
38.	Industry has concerns with Section 3.3.1 of this draft, which says, "Licensees should ensure that the safety culture assessment framework is mapped against the five safety culture characteristics (section 2 of the document), and is used at all stages of the assessment process." Licensees believe this is overly prescriptive and feel the regulator should not impose how an assessment is performed, what framework is chosen or how it is mapped against the regulatory framework. Some Canadian operators are actively engaged in the joint IAEA–WANO/INPO initiative to harmonize safety culture frameworks and believe this is counter to those efforts to use a common vocabulary in regard. Several licensees already use the INPO/WANO framework, which has been mapped against the IAEA Standard Framework, and would be willing to provide such a mapping of characteristics to the CNSC for future drafts of this REGDOC. It is unclear in the current	Remove Section 3.3.1. Section 3.4 provides sufficient direction for licensees to perform assessments. Alternatively, industry suggests the use of the five safety culture characteristics be optional for utilities that may not currently have anything in place.	**Major**	Given that some licensees already use INPO's 10 Traits of a Healthy Nuclear Safety Culture, licensees would have to restructure their assessment processes greatly to meet what this section's expectations. This draft document does say, in section 3.4.1, that, "The licensee should be able to demonstrate that each characteristic in the CNSC's safety culture reference framework is clearly and effectively addressed." This suggests that if licensees can prove their framework is effective, they can continue to use it. The quality of assessments will be preserved if licensees that already use the INPO traits continue to do so because the traits: are familiar to personnel; already integrated into existing frameworks; used by the NRC and

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	version whether the CNSC expectation is for the assessment itself to be mapped back to the bespoke CNSC framework, which would be a level of effort that would not add value for licensees with mature programs.			other worldwide regulatory agencies; adopted to align with nuclear industries for benchmarking purposes; used in previous assessments allowing for direct historical (trend) mapping.
Section 3.3.3 Assessment team selection				
39.	Licensees believe this section provides an extensive list of "should" statement that, in practice, will be virtually impossible to satisfy. For instance, the assessment team leader selection is too detailed and prescriptive, particularly for hybrid assessments. These responsibilities do not necessarily need to be done by the team leader and often would not if they had an internal team lead. Nor does this section state that an assessment team should include someone with knowledge and expertise in assessments of security culture, should that requirement not be removed from this draft as urged by licensees.	Remove Section 3.3.3. Section 3.4 provides sufficient direction for licensees to perform assessments. Alternatively, the CNSC could: delete the detailed list of responsibilities and simply state that responsibilities for the team leader and members should be defined (recognizing that any team will be a compromise of potentially competing factors and skill sets among its members); revise the "should" factors, to "considerations" for choosing team members; add nuclear security culture to the list of qualifications for assessment team members.	**Major**	Industry needs flexibility to choose team members to conduct effective safety culture assessments.
Section 3.4 Safety culture assessment process				
40.	The draft identifies nuclear safety culture assessment as an ongoing process, but indicates assessments are to be conducted every three years which would make them periodic, repetitive events. The CNSC can provide clarity by removing the phrase, "'is an ongoing process" from future drafts.		*Request for clarification*	
41.	**3.4.1 -** Industry is concerned the CNSC is prescribing detailed safety culture characteristics, particularly with the final sentence on page 9, which says, "The licensee should be able to demonstrate that each characteristic in the CNSC's safety culture reference framework is clearly and effectively addressed." As earlier indicated, licensees believe it should be acceptable to perform a one-time mapping of how the characteristics are related	Replace the sentence with, "The licensee should be able to demonstrate that it addresses its own framework."	**Major**	It is important that licensees retain control of what it determines are the important characteristics of its own safety culture framework.

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
	to the INPO Traits of a Healthy Nuclear Safety Culture, or other credible nuclear safety culture documentation.			
42.	**3.4.3 -** The document suggests that improvements following an assessment will lead to improvements in established policies and procedures. Not all improvements will change policy and procedures.	Rewrite to say, "How a licensee chooses improvements following an assessment, and the commitment to implementing these improvements, should be consistent with the existing management system ~~and lead to improvements in established policies and procedures~~."	**Minor**	
43.	**3.4.4 -** A list of safety culture monitoring activities has been included in section 3.4.4, which states that, "Licensees should consider these monitoring activities when planning subsequent assessments."	Change the word "should" to "may" and remove the reference to appendix B in the second paragraph of 3.4.4.	**Major**	Currently, industry does not use all of these monitoring activities. If it were to do so, it would require additional effort with no corresponding benefit to nuclear safety. Examples include: providing topic-based surveys; focus area surveys and follow up surveys; reflecting on formal and informal dialogue focused on safety between management and other workers.
44.	**3.5 -**The guidance on record keeping is too prescriptive and already covered by licensee management systems	Remove the section on record keeping.	**Major**	This is conflicting and unnecessary guidance.
Section 4 SUMMARY REPORTS **CNSC Requirement**: *Upon completion of a safety culture assessment, the licensees shall prepare a summary report for submission to the CNSC*				
45.	The requirement to submit a summary report to the regulator will negatively impact the validity and quality of future assessments because they will become publically available through the *Access to Information Act.* There is a real risk that participants in future assessments will be less self-critical or forthcoming knowing assessment summaries will be publically available. The need to protect the integrity of peer reviews is precisely why WANO continues to ensure its assessments remain as confidential and effective learning tools for the industry.	Remove the requirement to submit a summary report. Encourage licensees to provide the CNSC with their approach to the assessment, provide a confidential briefing on the key themes and planned actions to ensure continuous improvement in fostering a healthy nuclear safety culture.	**Major**	Licensees have conducted assessments in the past without submitting summary reports to the CNSC. It is highly likely that responses to surveys and interviews would be skewed once workers understand their responses are going to be summarized for the regulator and the public. This could have a negative effect on the validity of the assessments. The CNSC's current, non-intrusive approach has helped promote nuclear safety culture assessments as an effective management tool, not a regulatory one. This has resulted

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
				in positive benefits like ongoing engagement from site management and open, honest internal discussions about nuclear safety culture. Should the perception of assessments be changed to simply "another regulatory report/requirement," there is a real risk the utility of the assessments will erode. Ensuring a measure of confidentiality in the results is important to preserve continued open and self-critical reflection.
46.	Has the CNSC considered and understood the chilling effect on open, honest answers from licensee staff that is likely to result from requiring a detailed summary report be provided to the CNSC? Similarly, what considerations has the CNSC given to the impact of public communications on safety culture data collected from workers promised confidentiality to ensure they would be self-critical and fulsome during assessments?		*Request for clarification*	
47.	Please clarify the level of detail the CNSC requires in a summary report, particularly as it relates to a chosen assessment model? Is it acceptable to refer to a licensee's procedure and not outline/reproduce that procedure in a summary report?		*Request for clarification*	
48.	The 3rd bullet says, "the chosen assessment method and associated safety culture framework." This implies that a licensee can use a safety culture framework different than the one described in Section 2. Please clarify.		*Request for clarification*	
49.	Under guidance in Section 4 on the summary report, what is meant by, "The description of the safety culture assessment's goals should explain how the assessment supports organizational objectives. An overview of how		*Request for clarification*	

Industry comments on REGDOC-2.1.2, Safety Culture

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
	the safety culture assessment relates to relevant organizational programs and practices should be included"?			
APPENDIX A - Applicable Requirements and Guidance, by Licence and Activity Type				
50.	Ensure consistency of language and intent between the main text and the appendix in the graded approach being adopted for some sections of the REGDOC.	Delete the term "prudent management practice" as part of the descriptor to guidance in Table A1, as this erodes the notion that these sections are guidance and can be applied in a graded manner as is stated in Section 1.2.	**Minor**	
51.	The draft REGDOC needs to ensure continuity with export and import license regulations.	Import and export licences should be added to Table A1 as guidance	**Minor**	
APPENDIX B – Safety Culture Maturity Model				
52.	Industry believes the proposed nuclear safety culture maturity model is misaligned with the nuclear safety culture characteristics and poorly integrated overall with the draft REGDOC. Its use could create an environment where a licensee's culture is perceived as an absolute value that is simply pass or fail. Licensees are deeply concerned that indicator scores would be used to plot stage 1, 2 or 3 and culture cannot be measured by a set of indicators. Industry notes that in Table B1, the indicators section does not seem to list indicators at all. The IAEA has a number of documents and programs aimed at countries that are newly developing a nuclear industry and regulatory infrastructure. 'Stage 1: Requirement-driven' of the maturity model appears to be directed towards such countries. However, Canada has an established, internationally-recognized nuclear regulatory infrastructure. Operating within that infrastructure, licensees are already committed to remain within 'Stage 3: Continually improving.'	Licensees strongly recommend the CNSC remove the entirety of Appendix B and any references to the Maturity Model.	**Major**	This is a secondary methodology which is not aligned to the characteristics or attributes (i.e. the diversity element). This introduces another framework and would create an additional administrative burden with no apparent, corresponding value. There could potentially be unintended outcomes and consequences of using this maturity model causing strict compliance and a lowering of standards. It could pressure licensees to meet fixed culture score requirements rather than focusing on utilizing nuclear safety culture surveys as another performance improvement tool. Considering a nuclear safety culture assessment is, in part, the workforce's perception of safety, using a maturity model based on rigid scores could create an environment in which licensees shy away from any initiatives that could give workers a perception that safety needs improvement since this could result in lower

#	Industry Issue	Suggested Change(*if applicable*)	Major, minor or clarification	Impact on Industry, if major comment
				scores.
53.	Why does the CNSC want to incorporate an unfamiliar, untested maturity model requirement? What value is expected? How will it be used? Does the CNSC consider the maturity model an empirical method of measurement? Is this intended to be a secondary assessment methodology? Given industry's questions on the maturity model, what assurances do licensees have that guidance provided in the document will be managed as guidance and not as requirements?		*Requests for clarification*	

Mapping of Reg Doc Framework to INPO's 10 Traits of a Healthy Nuclear Safety Culture

CNSC Framework	Primary Mapping	Secondary Mapping	
• Safety is a clearly recognized value	Strategic Commitment to Safety (LA.4)		
o Resources are allocated as necessary to ensure safety.	Resources (LA.1)		
o Multiple mechanisms are used to clearly communicate the value of safety in the organization.	Free Flow of Information (CO.3)		
o Timely decisions are made that reflect the value and relative priority placed on safety.	Conservative Bias (DM.2)	Basis for Decisions (CO.2)	
o The importance of safety is documented and demonstrated in the operation of the organization.	Documentation (WP.3)		
o The promotion of a healthy safety culture is prevalent throughout all aspects of the management system.	Teamwork (PA.3)		
o Everyone understands that safety, security, and production are closely linked.	Job Ownership (PA.2)	Not specific to Security	
o Everyone understands that a credible threat to security exists, and acknowledges that nuclear security is important*.	No corresponding OPG attribute		
o There is a sense of urgency to correct significant security weaknesses or vulnerabilities*.	No corresponding OPG attribute	Resolution (PI.3)	Not sepcfic to Security
• Accountability for safety is clear	Roles, Responsibilities, and Authorities (LA.6)		
o There are clearly defined roles and responsibilities for all levels and positions in the organization.	Roles, Responsibilities, and Authorities (LA.6)		
o Everyone is held accountable for adherence to established policies and procedures	Procedure Adherence (WP.4)	Standards (PA.1)	
o Shared safety responsibilities are delegated to individuals and teams with appropriate authority.	Roles, Responsibilities, and Authorities (LA.6)		
o There is a high degree of compliance with, and understanding of, regulatory requirements.	Standards (PA.1)		
o Complete and accurate information is provided to the CNSC in a timely and open manner.	Strategic Commitment to Safety (LA.4)	An appropriate relationship with the regulatory body exists, which ensures that the accountability for safety remains with the licensee	
o Everyone demonstrates a commitment to safety throughout the organization and an understanding of how they contribute to safety goals.	Job Ownership (PA.2)		
o Everyone understands how their roles and interfaces contribute to maintaining security*.	No corresponding OPG attribute		
• A learning organization is built around safety	7. Continuous Learning (CL)		
o Lessons learned from experiences internal and external to the organization, including successes and challenges, are used as a basis for continual improvement.	Operating Experience (CL.1)		
o Safety culture assessments, including self-assessments are used to improve performance.	Self-Assessment (CL.2)		
o Processes exist to identify and correct problems in a timely manner, and to develop, implement, and measure the effectiveness of corrective and preventive actions.	Identification (PI.1)		
o Various training methods are used to maintain and improve professional and technical competence of members of the organization.	Training (CL.4)		
o Safety performance indicators are continually developed, tracked, evaluated and acted on.	Trending (PI.4)		
o Workers are encouraged and recognized for reporting concerns or suspicions, and feel that they have been heard when they voice issues.	Identification (PI.1)		
o A questioning attitude is maintained by all members of the organization to constantly challenge the safety of day-to-day activities.	Challenge Assumptions (QA.3)		
o There is systematic development of individual competencies.	Training (CL.4)		
o There is an appreciation throughout the organization for diversity of opinion.	Opinions are Valued (WE.2)		
o Lessons learned are shared with domestic and international partners.	Benchmarking (CL.3)		
• Safety is integrated into all activities in the organization	Strategic Commitment to Safety (LA.4)		
o There are good housekeeping practices, well maintained materials and equipment, and good working conditions in place.	Standards (PA.1)		
o Documentation and processes, from planning to implementation and review, are complete and followed in accordance with management system requirements.	Work Management (WP.1)		
o Safety performance indicators are continually tracked, trended and evaluated in order to monitor safety; ineffective performance indicators are refined and improved to ensure they continually reflect the health of the licensee's safety culture.	Trending (PI.4)	Constant Examination (LA.7)	
o A comprehensive approach to safety and security is integrated throughout the organization.	No corresponding OPG attribute		
o Workers have the necessary knowledge of work processes and adhere to them.	10. Work Processes (WP)		
o Workers are involved in risk assessment and decision-making processes.	Consistent Process (DM.1)	Work Management (WP.1)	
o Workers are empowered to address issues related to nuclear security matters*.	No corresponding OPG attribute		
• A safety leadership process exists in the organization	4. Leadership Safety Values and Actions (LA)		
o All workers are involved and motivated in promoting a healthy safety culture.	Incentives, Sanctions, and Rewards (LA.3)		
o Managers are visible and actively involved in both preventive and reactive safety-related activities.	Field Presence (LA.2)		
o Change management processes are in place and are followed to achieve orderly transitions.	Change Management (LA.5)		
o Collaboration, mutual respect, safety conscious behaviour and teamwork are encouraged, supported and recognized.	Teamwork (PA.3)	Opinions are Valued (WE.2)	
o Commitment to safety is evident at all levels of the organization.	Strategic Commitment to Safety (LA.4)		
o The impact of informal leaders on safety culture is recognized and leveraged to continually improve safety culture.	No corresponding OPG attribute		
o There are clear expectations and policies to support open communications.	Free Flow of Information (CO.3)		
o Managers communicate clear expectations for performance in areas that affect safety and security.	Expectations (CO.4)		
o A proactive and long-term approach to safety is demonstrated in decision making.	Consistent Process (DM.1)		
o Managers recognize and take charge of all security weakness or vulnerabilities*	No corresponding OPG attribute		
o Managers do not abuse authority to circumvent security*.	No corresponding OPG attribute		
o Managers seek continual improvement in security and work to prevent complacency from compromising overall security objectives*.	No corresponding OPG attribute	Avoid Complacency (QA.4)	Not sepcfic to Security

INPO Framework

1. Personal Accountability (PA)
Standards (PA.1)
Job Ownership (PA.2)
Teamwork (PA.3)

2. Questioning Attitude (QA)
Nuclear is Recognized as Special and Unique (QA.1)
Challenge the Unknown (QA.2)
Challenge Assumptions (QA.3)
Avoid Complacency (QA.4)

3. Effective Safety Communication (CO)
Work Process Communications (CO.1)
Basis for Decisions (CO.2)
Free Flow of Information (CO.3)
Expectations (CO.4)

4. Leadership Safety Values and Actions (LA)
Resources (LA.1)
Field Presence (LA.2)
Incentives, Sanctions, and Rewards (LA.3)
Strategic Commitment to Safety (LA.4)
Change Management (LA.5)
Roles, Responsibilities, and Authorities (LA.6)
Constant Examination (LA.7)
Leader Behaviors (LA.8)

5. Decision-Making (DM)
Consistent Process (DM.1)
Conservative Bias (DM.2)
Accountability for Decisions (DM.3)

6. Respectful Work Environment (WE)
Respect is Evident (WE.1)
Opinions are Valued (WE.2)
High Level of Trust (WE.3)
Conflict Resolution (WE.4)

7. Continuous Learning (CL)
Operating Experience (CL.1)
Self-Assessment (CL.2)
Benchmarking (CL.3)
Training (CL.4)

8. Problem Identification and Resolution (PI)
Identification (PI.1)
Evaluation (PI.2)
Resolution (PI.3)
Trending (PI.4)

9. Environment for Raising Concerns (RC)
SCWE Policy (RC.1)
Alternate Process for Raising Concerns (RC.2)

10. Work Processes (WP)
Work Management (WP.1)
Design Margins (WP.2)
Documentation (WP.3)
Procedure Adherence (WP.4)

Represents where INPO mapped the IAEA attributes to the INPO Attributes (Ref INPO 12-012, Rev 1 Addendum II Table 7)

Represents no corresponding INPO attribute / no corresponding Reg Doc attribute

Represents where OPG thinks an INPO attribute is similar to a Reg Doc attribute