



February 8, 2017

Canadian Nuclear Safety Commission  
P.O. Box 1046, Station B  
280 Slater Street  
Ottawa, Ontario, K1P 5S9

**Subject: Nordion Comments on Discussion Paper DIS-16-05, Human Performance**

Dear Sir or Madam,

We are providing comments on the CNSC Discussion Paper "DIS-16-05, Human Performance" issued for comments by the CNSC October 19, 2016.

Nordion believes that human performance is not a standalone program but rather a key component of a strong radiation safety program and is currently effectively encompassed within existing programs required by the CNSC and implemented by Nordion.

It is Nordion's position that the formal implementation of a systemic human performance program, with a broad, integrated view of human factors, would be an administrative burden requiring considerable cost and effort, with little or no safety benefit to be gained.

In the last few years, there has been a significant increase in regulatory requirements, as evident in the regulatory framework issued by the CNSC in the fall of 2016 and previous years. This has resulted in overlapping requirements and has significantly increased Nordion's administrative workload without any apparent risk and/or safety driver.

In summary, Nordion is strongly opposed to this implementation of a formal human performance program and recommends that the CNSC discontinue the process associated with DIS-16-05, "Human Performance". Should the CNSC decide to proceed, Nordion recommends a graded approach which would take into consideration existing programs.

Comments related to the specific questions posed by the CNSC are provided in Attachment A.

Should you have any questions or require additional information, please do not hesitate to contact me at (613)592-3400 extension 2730, or e-mail at [jackie.kavanagh@nordion.com](mailto:jackie.kavanagh@nordion.com).

Sincerely,

Jackie Kavanagh  
Sr. Manager, Facility Nuclear Compliance

**Attachment A:  
Nordion Comments on Discussion Paper DIS-16-05, Human Performance**

#	Question	Nordion Comments
1	Do you agree with the definition of human performance as stated above? Are there changes or alternative definitions you would propose?	<p>As currently written, the wording is awkward as it assigns behaviors to human activities. At a minimum the definition should provide specific details regarding behaviors i.e. “human performance is the behaviors (how an individual worker carries out their tasks)”.</p> <p>In addition, the definition is too vague, very broad and all encompassing. Such a concise definition would likely lead to a lot of discussion by licensees and regulators as to the interpretation.</p>
2	Do you propose any changes or alternatives to the CNSC’s existing definition of human factors? Please provide rationale for any proposed changes or alternatives.	<p>As currently written, the definition is very broad, open to interpretation as to the extent to which various human factors would apply to different types of licensed activities.</p> <p>We believe that individual judgement and decision making are also human factors that influence human performance and are missing from the existing list. Allowing individual workers to exercise good judgement and decision making, in for example radiation protection and safety situations, can result in improved human performance whereas overly prescriptive procedures can in some cases lead to decreased human performance.</p> <p>“An individual’s perceived control and ability to participate in work related outcome decisions were positively related to job satisfaction” (Spector, 1986)</p> <p>“A feeling of being in on things, and of being given opportunities to participate in decision making often reduces stress and creates trust and a culture where people want to take ownership of problems and their solutions” (Ivey Business Journal)</p> <p>“Control is, in fact, at the heart of the third most important driver of engagement: freedom to make decisions relating to one’s job” (Towers Perrin 2003)</p>

#	Question	Nordion Comments
3	Do you agree with the objectives and practices of a human performance program listed above? Are there items that you would add to or remove from the lists? Please explain.	<p>The CNSC objectives and practices are very detailed. Rather than the CNSC being prescriptive we suggest a high level definition to allow licensees the ability to have a graded approach as appropriate based on risk.</p> <p>As per section 4, we would agree with the following high level definition and high level objective:</p> <p>“A human performance program is a set of coordinated activities and processes that considers the performance of workers carrying out their tasks. The high-level objective of the human performance program is to achieve desirable performance and safety outcomes across the range of conditions, from routine activities to potential accidents and emergencies”.</p>
4	Do you agree with the elements of a human performance program listed above? Are there items that you would add to or remove from the list above? Please explain.	<p>The elements of a human performance program that the CNSC lists are largely covered by existing safety management systems. As such, these human performance elements are not “competing for resources” within our organization as they are an integrated part of our safety management system. A separate human performance program would result in overlapping requirements and significantly increase Nordion’s administrative workload without any apparent risk and/or safety driver.</p> <p>Human performance is an integral part of our safety management system and is taken into account into all aspects of our licensed activities. We see no value in having a separate human performance program.</p>
5	Do you agree with the concept of a human performance program described above? If you would propose other ways of viewing a human performance program and its elements, please describe them.	<p>As previously indicated, Nordion does not support the requirement for a “formal” standalone human performance program. Please refer to question 4 comments. A human performance program may not be appropriate for different licensed facilities and activities.</p>

#	Question	Nordion Comments
6	Do you think that the requirement to have a human performance program should be applied using a graded approach to all CNSC-licensed facilities and activities? If so, what might this graded approach look like?	<p>The CNSC should apply a graded approach, which should take into consideration existing programs encompassing the elements of a human performance program. As such, a separate formal program should not be a requirement. The creation of a roadmap document should not be required where human performance elements are incorporated into other documented programs and procedures.</p> <p>This is in keeping with the concept that a Human Performance program is a key component of, and not a standalone program to, radiation and conventional safety programs</p>
7	Which type of human performance program (a formal or otherwise) is most appropriate for the types of nuclear facilities most relevant to your comments, and why?	<p>Many of the elements of human performance are effectively implemented in existing programs at Nordion. We do not support the creation of a separate human performance program document or a roadmap requirement as they would result in additional administrative burden to create and maintain without any apparent risk and/or safety driver.</p>
8	Do you propose any additional or alternative expectations of a human performance program?	<p>Nordion is strongly opposed to the implementation of a requirement for formal human performance programs and recommends that the CNSC discontinue its development.</p>
9	General Comment	<p>It is Nordion's view that the implementation of a formal human performance program, with a broad, integrated view of human factors would be an administrative burden requiring considerable cost and effort, with little or no safety benefit to be gained. The elements of a human performance program are currently effectively encompassed within existing programs.</p> <p>Nordion is strongly opposed to the implementation of a formal human performance program and recommends that the CNSC not proceed with this approach to regulating human performance.</p>