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**Sent:** February-16-17 4:00 PM

**To:** [Monica.HAAGE@oecd.org](mailto:Monica.HAAGE@oecd.org)

**Subject:** RE: [External\_Sender] [Review Request] CNSC - Human Performance Discussion Paper

Hey Monica,

Here is feedback from Dr. Valerie Barnes from my staff:

Overall, it's a very well-written and useful paper. Thanks for the opportunity to review it.

Re Q1 on the proposed definition of human performance – The definition includes both human behaviors and their results, which may introduce some potential for confusion. In the US, we generally use the term “human performance” to refer to the outcomes/results of human behavior at a more global level, but reserve the terms, “behaviors” and “actions,” to describe what specifically humans do (or don't do). As used in the US, the “performance” part of the term communicates that there's an evaluative aspect to the concept, where the outcomes are desirable or undesirable in a particular context. In addition, defining human performance as an outcome clarifies the underlying causal assumptions, i.e., one affects human performance by changing human behaviors and one changes human behaviors with attention to human factors as well as tools. Although human behaviors/actions are necessary to the concept of “human performance,” the definition may be simpler/cleaner without mentioning them.

I'd also suggest moving the discussion of human error into this section, as it would provide an opportunity to further discuss the importance of context. I appreciate the point made in this section that wrong/unsafe/inappropriate human actions may result in desirable outcomes, but it may also be useful to discuss how correct/safe/appropriate actions may also result in undesirable outcomes, depending on the situation.

Re Q2 – Would prefer to see human factors defined as the factors that influence human behaviors rather than human performance, but only if the definition is changed, as above.

Re Q3 – Agree.

Re Qs 4 and 5 – The bulleted list of elements seems complete, but the items are presented very briefly. For example, management and supervision are listed, but the reader is left to define the terms individually. What about management and supervision? Would it be possible to expand the bullets with a bit more description?

Qs 6 and 7 – Agree that a graded approach is appropriate. Prefer to see the grading done according to the potential risk/safety- or security-significance of the activity, rather than grading by imposing fewer elements. If an activity is potentially risky and human behavior is a significant contributor to the risk, we'd want to use all reasonable approaches/tools available to support correct performance. For example, even if the operator is using peer-checking and 3-way communication, we still want him/her to be fit for duty.

Q8 – No proposed alternatives.