

**From:** [Marshall, Michael](#)  
**To:** [Mascitelli, Francis J:\(Constellation Nuclear\)](#); [Pareez Golub](#)  
**Cc:** [Jain, Bhagwat](#)  
**Subject:** Information Needed to Provide Substantive Feedback on Human Factors Engineering Supporting the Planned Limerick Digital I&C License Amendment Request (L-2020-LRM-0041)  
**Date:** Wednesday, May 04, 2022 1:37:00 PM

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Hello Frank,

In order to provide substantive feedback on the human factors engineering (HFE) information that Constellation plans to include in its planned Limerick digital instrumentation and controls (I&C) license amendment request (LAR), Constellation should be prepared to provide the following information to the NRC staff during the May 16, 2022 public meeting between the NRC staff and Constellation:

- What is the plan for completing integrated system validation (ISV)? What is the timeline associated with completing the ISV? Will it be done prior to the requested LAR review completion date and, if not, how will ISV be accounted for? Discuss whether it is intended to use any alternative approaches to having the ISV done in time for the staff to review the results for inclusion within their safety evaluation for the LAR, such as use of multi-stage validation or license conditions.
  - If alternative approaches to a full-scope, plant-referenced Limerick simulator will be used to support the verification and validation process, please clarify how that will be achieved and what methods are planned to be used.
- How will the HFE elements of the digital I&C design and implementation process be incorporated into the LAR, and what information will be provided at what stages? For example, is it intended to initially provide HFE implementation plans and to subsequently provide results summary reports? Or will a different approach be used?
- With regard to the submitted Limerick defense-in depth and diversity coping analysis, how will the information regarding new and modified manual operator actions be applied going forward into the remainder of the digital I&C submittal? For example, how will the identified manual operator actions be validated, particularly in instances where time-sensitive operations have been identified? For further perspective, please consider the content of Chapter 18-A, "Guidance for Crediting Manual Operator Actions in Diversity and Defense-in-Depth (D3) Analyses," of NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition*, and how this guidance interrelates with the information generated via the analyses described under Branch Technical Position 7-19, "Guidance for Evaluation of Diversity and Defense-in-Depth in Digital Computer-Based Instrumentation and Control Systems."

We are sending these questions to you in advance, to give Constellation time to consider the questions prior to the start of the meeting on the 16<sup>th</sup> of May. Please note that the NRC staff may ask additional questions and will make additional comments during the meeting.

Best Regards,  
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