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Sent: Thursday, October 28, 2021 10:53 AM
To: Raynaud, Patrick <Patrick.Raynaud@nrc.gov>
Subject: [External_Sender] Comments on ML21257A237

ADD: Matthew Gordon, Patrick Raynaud, Kyle Song, Mary Neely
Comment (2)
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Please find below some comments with respect to the “Technical Basis for the use of Probabilistic Fracture Mechanics in Regulatory Applications” report (ML21257A237)

- In page 22 first paragraph, it is said that LHS is considered a targeted sampling methods. My understanding of a targeted method is that the sampling density is changed to cover a specific region of the input space to better cover the statistics of one output of interest. LHS stratification is output independent and thus does not seem to match the definition of a targeted method (but maybe my definition is not correct).
- Furthermore, quasi-Monte Carlo Techniques (such as Halton Sequences and Lp-Tau) work similarly to LHS by trying to minimize the distance between two points and better cover the sample space without prior knowledge of the model and outputs of interest. Are these methods covered or are they considered to be too much specific to be included in the document?
- In section 4.2.2 (p. 44-48) rank correlation and functional relationship are presented as methods to insure good representation of physical relations between inputs. Have copula been considered as potential method that relaxed some of the correlation constraints ?

Please let me know if you need additional information with respect to my comments

Thanks

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