

Title	Studies on the effect of flaw detection probability assumptions on risk reduction at inspection
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Abstract	<p>The aim of the project was to study the effect of POD assumptions on failure probability using structural reliability models. The main interest was to investigate whether it is justifiable to use a simplified POD curve e.g. in risk-informed in-service inspection (RI-ISI) studies. The results of the study indicate that the use of a simplified POD curve could be justifiable in RI-ISI applications.</p> <p>Another aim was to compare various structural reliability calculation approaches for a set of cases. Through benchmarking one can identify differences and similarities between modelling approaches, and provide added confidence on models and identify development needs. Comparing the leakage probabilities calculated by different approaches at the end of plant lifetime (60 years) shows that the results are very similar when inspections are not accounted for. However, when inspections are taken into account the predicted order of magnitude differs. Further studies would be needed to investigate the reasons for the differences. Development needs and plans for the benchmarked structural reliability models are discussed.</p>
Key words	Structural reliability, in-service inspections, NDE, probability of detection