Webinar Q&A RMC-TotalRisk 1.0 for Quantitative Risk Analysis

#	Question	Answer	Answer Name
1	enlarge screen size please. Some slides hard to read		
2	Does this software align with, or incorporate, the dam risk assessment guidelines established by ANCOLD (Australian National Committee on Large Dams)?	Good question, yes the ANCOLD and USACE assessment guidelines are included in the risk assessment results. Further, you can define a unique guideline in the software specific to your study.	Woody Fields
3	How does the software treat/manage correlation of mechanisms?	You can define correlations between failure modes when setting up a risk computation. At this time we do not have correlated nodal probabilities in the event tree for estimating probability of failure.	Woody Fields
	does that suggest possible future intent?		Attendee
4	Very interesting presentation and my concern is the time to conduct a QRA versus a Semi-quantitative risk assessment, which is more applicable to dam operators in the field.	I'll let Haden speak to this and how it relates to TotalRisk. QRA time and costs can be extensive whereas SQRAs can help. TotalRisk has been developed to be used for both types of risk assessment.	Woody Fields
5	Good evening everyone (from americas).

Haden, how does that tornado plot considers the x-axis?
If that came from na example, could you please explain more about that sensitivity? | The tornado plot will rank which failure mode or event tree node contributes the most to the overall variance of the outputs. These require the uncertainty analysis option. | Haden Smith |
| 6 | From Nick Ostrovsky:
In Australia, we need to report on both on societal and individual risk as per ANCOLD guidelines. It doesn't seem like TotalRisk v1.0 does individual risk calculations at the moment, will they add this feature in the future? | We plan to add some options for this in future versions. | Haden Smith |
7	Hey Woody, is the upcoming training session similar in content to the one hosted by ANCOLD at release? Is there opportunity to run through some more 'advanced' examples? Also do you have plans for further versions/updates to the software?	The web training will be three 2 hour sessions. We will provide several real-world examples in each session. The third session will provide complex and advanced examples.	Haden Smith
8	could this be used for an L2RA, that is scaled back?	Yes, assuming Level 2 for FERC? You can model SQRA-type analyses with TotalRisk. We plan to provide example	Haden Smith
9	Can we model Sunami Waves, heights and extension into land?	There are options for modeling bivariate responses, or multivariate with event trees. We plan to include more	Haden Smith
10	Thanks Haden. We have been told that only 20 Failure modes can be handled by the tool but I was told last week at NZSOLD that it can handle more failure modes using only the common cause adjustment and no uncertaintly analysis. Is that correct and how many can it handle?	Yes, if you are using the joint risk or competing risk option, the limit is 20 due to combinatoric restrictions. The CCA or ME options allow unlimited failure modes.	Haden Smith
11	Does RMC provide training to USACE districts? Haven't seen this one on PROSPECT	We are developing USACE training that should be available sometime next year.	Haden Smith
12	I have used TotalRisk on a few dam risk reports and I think it's a great tool. I was wondering if you can talk a bit more on the risk options in the software, and talk about the differences between "additive risk" and "joint risk". I understand the "additive risk" mode doesn't plot the F-N plot whilst the "joint risk" mode does.	live answered	AWS Admin
13	Does this software assess risk related to geomorphological changes in the catchment areas that impacts the performance of the dams?	You can run multiple risk analyses within a project file. So you can have a hazard function for current conditions, and one for future changes, and run 2 analyses. You can then plot and compare both results together.	Haden Smith
		Hi Haden.Appreciated your reply.How do you interpret the results to take appropriate decisions now to avoid future disasters due to unsustainable catchment area development plans.	Attendee
14	What new features do you have planned for Version 1.1?	live answered	AWS Admin
15	Hi Haden. Your levee evaluation tool uses a lot of historical data for getting failure modes estimated. Will this data be included in the model at some stage as a sanity check?	We are developing a separate tool for system response probabilities for the dam and levee screening tools. We plan to make that functionality available with an API and eventually include it in TotalRisk.	Haden Smith
16	Does the RMC software provide the hydraulic loading and breach mechanisms (based on event analysis) for failure and modelling the dam break	No, it is not an event-simulator. You should still run breaches in HEC-RAS and model consequences in LifeSim. Those results can be imported to TotalRisk.	Haden Smith
17	Can RMC-TotalRisk includes various water levels, reservoir dam failure operation scenarios besides Probable Maximum Flood (PMF)?	Yes, ideally you bring in full hazard functions derived from a stochastic simulation.	Haden Smith
18	Can you add a branch manually at a certain node within the pre-populated event trees?	Yes, you can reference pre-populated trees elsewhere in the project.	Haden Smith
19	Thanks Haden, but we still need to run the breach scenarios and does this program provide guidance on the breach mechanism and pre-triggers	This software does not, but the LifeSim manuals and training material does provide good guidance on this. There are also good references on the RMC website. https://www.rmc.usace.army.mil/	Haden Smith
20	Are you using the mean value in uncertainty as the best estimate?	Yes, the mean is the decision theoretic best estimate. But percentiles and density plots for modal estimates are	Haden Smith
21	Can you reduce the displayed data precision? Talk about Excel hell!	Yes, you can edit the decimal digits under Tools > Options > Defaults	Haden Smith
22	Is there an automated way to present the inputs and outputs of the totalrisk model into a report?	Not yet, but it is planned for future versions.	Haden Smith
23	Have you attempted to use this on the Oroville dam spillway failue or the Folsom Dam gate failure?	We have modeled similar scenarios within our USACE portfolio.	Haden Smith
24	What about equipmnet/gate failure consequences?	Yes, that can be modeled. We will provide an example in the future training course.	Haden Smith
25	What is USACE RMC's preferred way of including spillway or other gate failures in gate reliability analysis into totalrisk software	Yes, gate failures and debris blockage scenarios can be incorporated using the composite hazard function option, assigning weights to each scenario. We also plan to add options in the reservoir frequency analysis software, RMC-	Haden Smith
26	Do the risk-assessment studies help in reviewing the reservoir operation plans to meet the water demands based on water availability and for timing the release of excess water from the spillway to avoid downstream damages?	It can be used for water resources planning. You would develop hazard curves for various reservoir operation plans, and run the risk for each. You can then compare results.	Haden Smith
27	Are there any upcoming in-person training sessions in Australia in 2026?	live answered	AWS Admin
28	what is the difference between background risk and non-failure risk?	background assume no probability of failure. So a perfect structure. Non-fail accounts for the possibility of failure.	Haden Smith