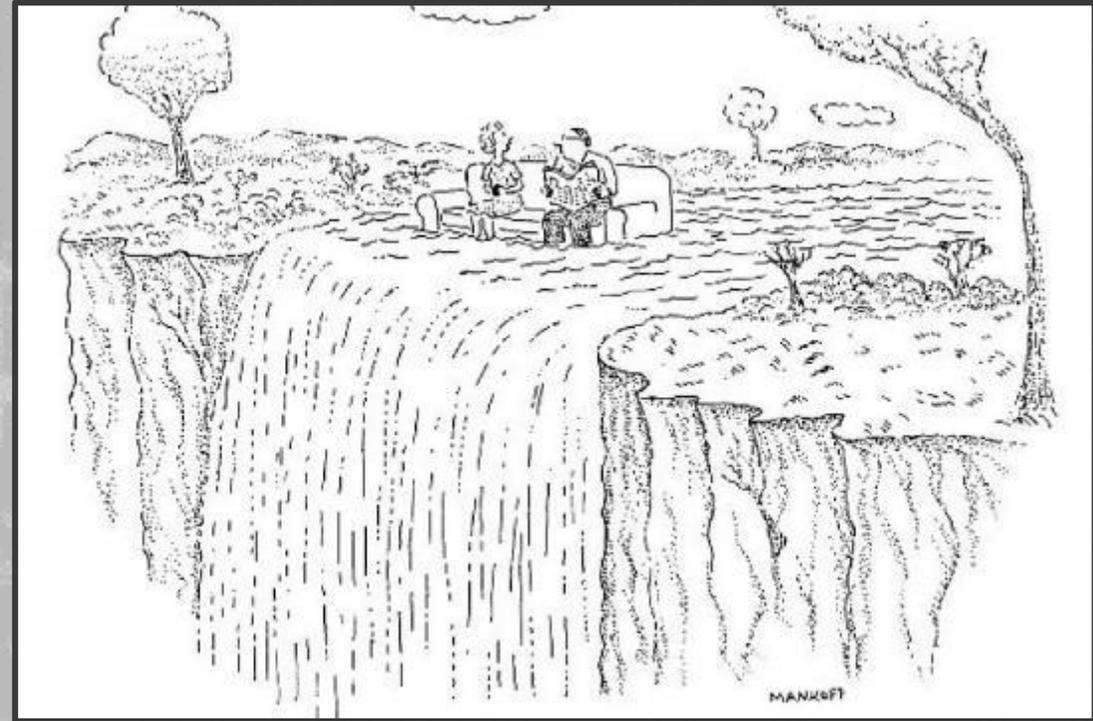


NAOC ANNUAL MEETING: RISK MANAGEMENT METHOD (RMM) UPDATE



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RISK MANAGEMENT METHOD (RMM)



Likelihood to Encounter

Matrix 1

Likelihood of Encounter (Amount of MEC versus Access Conditions)		Access Conditions (frequency of use)			
		Regular	Often	Intermittent	Rare
Amount of MEC	Category I (Most)	Frequent	Frequent	Likely	Occasional
	Category II	Frequent	Likely	Occasional	Seldom
	Category III	Likely	Occasional	Seldom	Unlikely
	Category IV	Occasional	Seldom	Unlikely	Unlikely
	Category V	Seldom	Seldom	Unlikely	Unlikely
	Category VI (Least)	Unlikely	Unlikely	Unlikely	Unlikely

Severity of Incident

Matrix 2

Severity of Explosive Incident (Severity vs. Likelihood of Encounter)		Likelihood of Encounter (from Matrix 1)				
		Frequent	Likely	Occasional	Seldom	Unlikely
Severity	Catastrophic/Critical	A	A	B	B	D
	Modest	B	B	B	C	D
	Minor	B	C	C	C	D
	Improbable	D	D	D	D	D



RISK MANAGEMENT METHOD (RMM)



Likelihood for Incident to Occur

Matrix 3

Likelihood of Detonation (Sensitivity vs. Likelihood to Impart Energy)		Likelihood to Impart Energy on an Item		
		High	Modest	Inconsequential
Sensitivity	High	1	1	3
	Moderate	1	2	3
	Low	1	3	3
	Not Sensitive	2	3	3

Resulting Site Conditions

Matrix 4

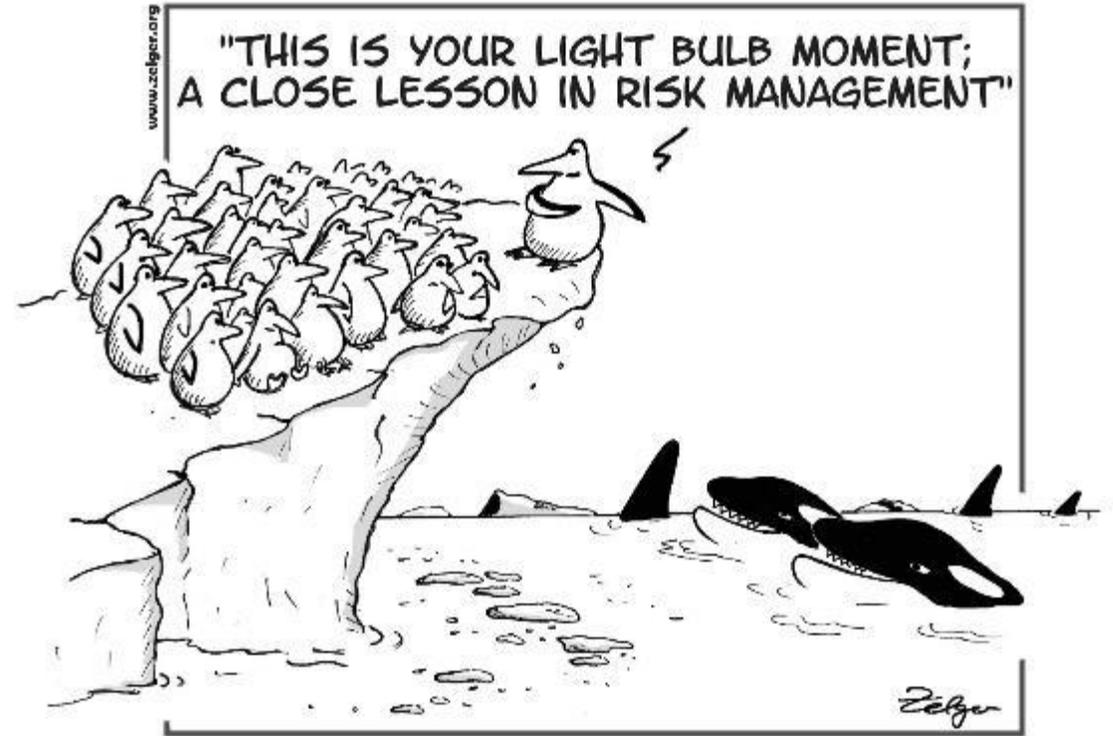
Acceptable and Unacceptable Site Conditions		Result from Matrix 2			
		A	B	C	D
Result from Matrix 3	1	Unacceptable	Unacceptable	Unacceptable	Acceptable
	2	Unacceptable	Unacceptable	Acceptable	Acceptable
	3	Unacceptable	Acceptable	Acceptable	Acceptable



NUMBER OF MRSs SO FAR?



FUDS	50<
ARNG	~10
AEC	~10
Air Force	3
Navy	0



Advanced training in the Antarctic territories

FUDS Memo Signed 3 Jan 2017, 2 Year Trial

- Lessons Learned and Extension Memo signed 7 Feb 2019 for 1 year
- Voluntary use for all other Programs, encouraged by the MRD



HAVE SITES ACHIEVED CLOSURE AFTER RI ON THE BASIS OF “NO UNACCEPTABLE RISKS”?



YES



“Guess what you forgot to take with you this morning!”

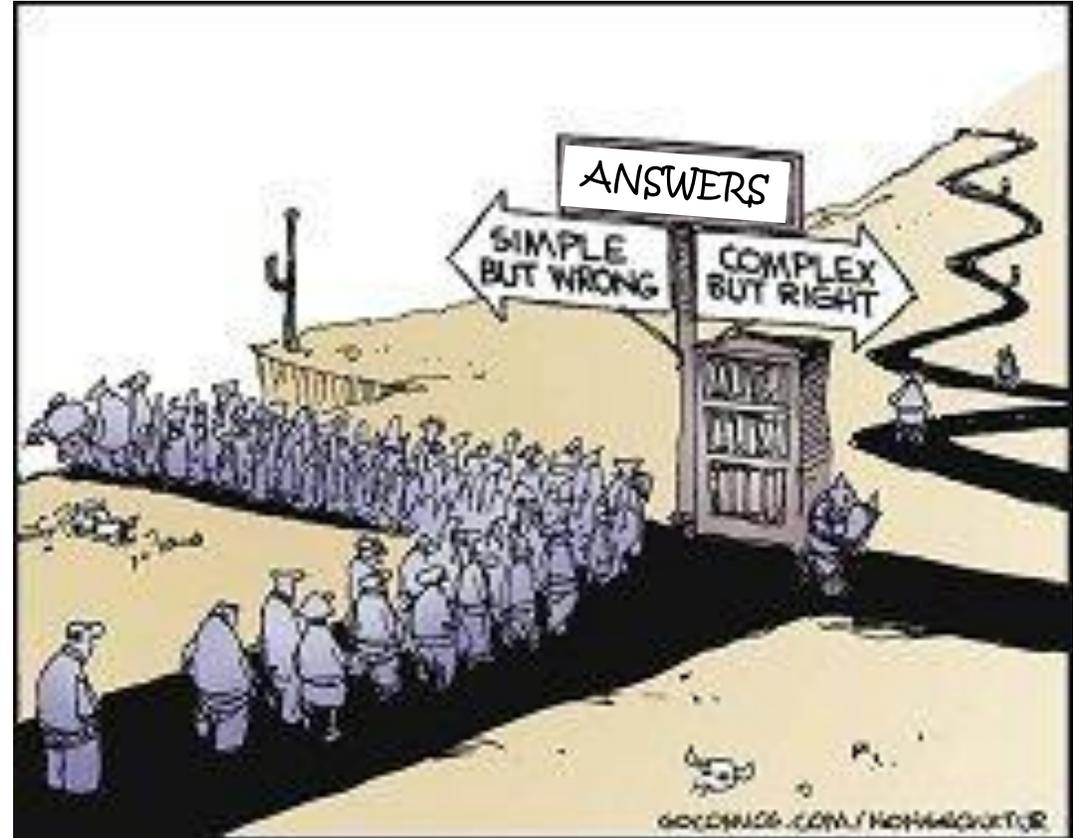


USED FOR REMEDIAL ACTIONS OR POST REMEDY DATA ASSESSMENT?



YES

...and YES





REGULATORY ACCEPTANCE



- Generally Positive, when informed
 - Supports decision point logic and RAO development
- Some concern with duplicity with other tools
- Want to contribute to further development

1. Many are still uninformed or unfamiliar...





SUPPORTS RAO DEVELOPMENT



RAOs established for each exposure scenario
Identify acceptable conditions for each scenario

MRS	Receptors	Location	Pathways	MEC Hazard	Vertical (ft bgs)	Baseline Risk	Acceptable Remediation Goals
Impact Areas (HUA)	Recreational users	All portions of impact area	Surface Interaction during hiking and recreation (Non-intrusive)	A1 Fuse	1.5	Unacceptable (B-2)	B-3 or D-2
				Mk4 GP 100lb Bomb	3.0	Unacceptable (A-2)	B-3 or D-2
	Maintenance Crews	Roads and trails plus 15 m buffer	Interaction during trail maintenance (Intrusive)	A1 Fuse	1.5	Unacceptable (B-2)	B-3 or D-1
				Mk4 GP 100lb Bomb	3.0	Unacceptable (B-2)	B-3 or D-1



PROJECT TEAM & INDUSTRY FEEDBACK



- Promotes Communication
- Promotes DQO Development & QAPP Consideration of Data Requirements
- Provides Standard Process for Various Conditions
- Data Reliant “Amount of MEC”
- Differentiates and Justifies Acceptable Vs. Unacceptable
- Supports Definition of RAOs
- No (Minimal) Δ \$
- Keeps NFA on the Table



CHALLENGES: GREY AREAS



- Data Requirements
 - Retrofit previous data?
 - Reassess data, and justify



- How to Develop Alternatives to Claim Success
 - How to capture the benefit of institutional controls?
 - Detail to capture “different” conditions or outcomes
- Delineation Consideration with Field Data vs Multiple Land Use Scenarios



OTHER COMMON QUESTIONS:



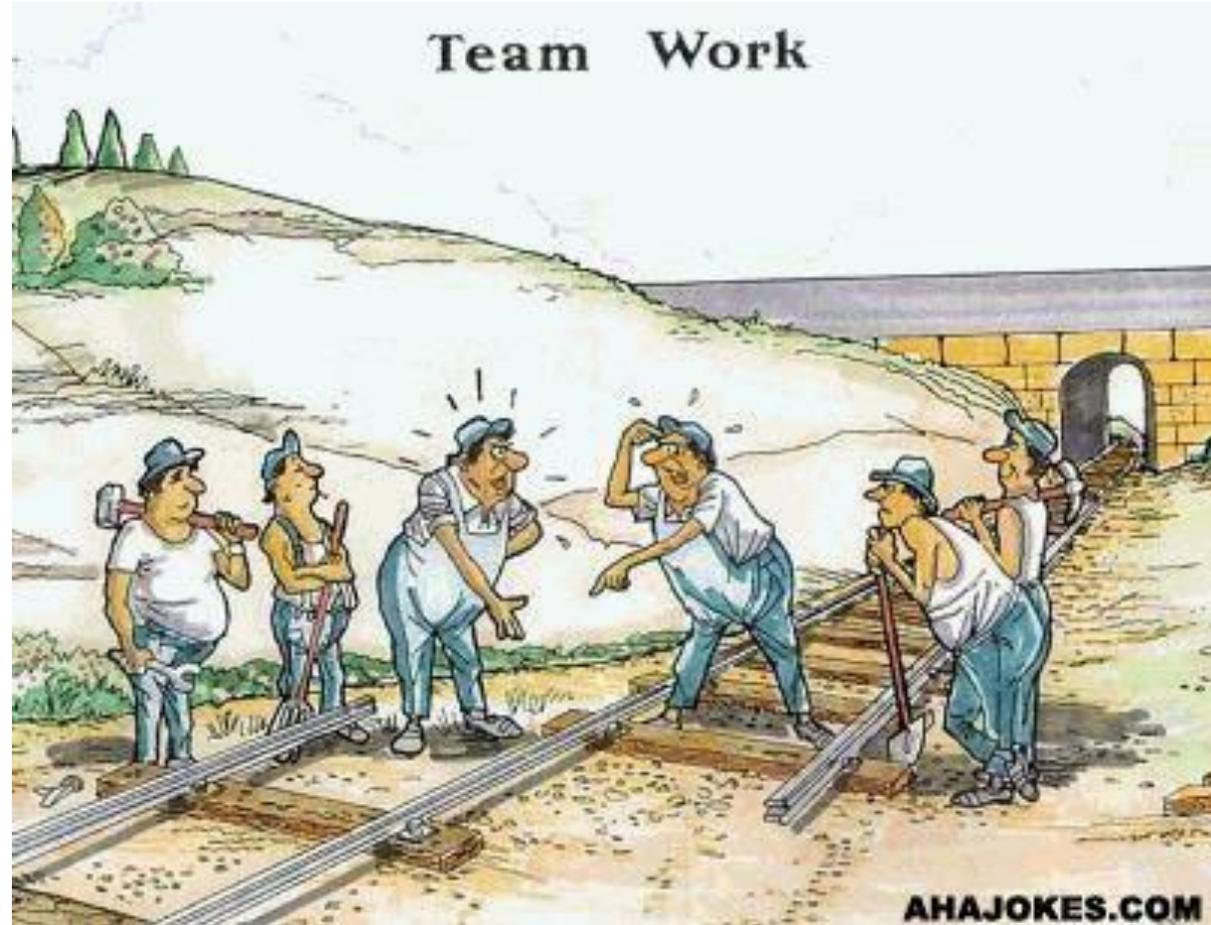
- Amount of MEC Scale
 - Better descriptions to stratify the scale are needed.
 - The example “Amount of MEC” ...to be removed
 - What is “Evidence of MEC” in Matrix 1?
- Frequency and access conditions, currently combined in Matrix 1, but...
 - These can be separated
 - Tool does not account for duration (standard timescale)
- Sensitivities and Severities per munitions type or guidance for selection in Matrices 2 & 3
- Land use scenarios, considering more fidelity in the descriptions of Matrix 3?
- How to support UU/UE?



FUTURE PLANS?



- 2018, FUDS only Guidance was planned....
- OSD Interest
- ASTSWMO Interest
- EPA Interest





QUESTIONS?



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