Lessons-Learned from Design/Application/Approval for Exclusion Zone Reductions

Brian S. Brunette, GSI Services Group, Ellington, CT
Jon Miller, White River Technologies, Lebanon, NH

Abstract

The concept of leveraging Advanced Geophysical Classification (AGC) methods of collecting, analyzing, modeling, an ultimately size predicting to prognosticate bins ('size groupings') for Exclusion Zone (EZ) reductions is an extremely valuable tool to have in the toolbox. However, detailed observations must be made, and careful considerations must be defined, all during designing/planning stage in order to realize an effective series of application and approval processes to confirm 'success'. As one would imagine, the more difficult the project site and associated Target of Interest (TOI) list, the more complicated the design, the application, and the approval processes will be to garner 'success' from subject matter experts (SMEs).

What will be reviewed is single project case study from a site with varying sized TOIs from small-sized fuzes/projectiles/rockets to mid-sized rockets/mortars/bombs all the way up to large bombs. Additionally, some TOIs had varying make/model and wall thicknesses to be searched. From the original plan/design and standard operation procedure phase of the Explosives Safety Submission, considerations were made regarding: **1)** parameter(s) to track as part of decision making and the quality aspect of decision making process; **2)** key deciding factors that go into determining the number of 'size bins' for implementation; **3)** correctly handling when different make/models from the same munition type initially show up in different 'size bins'; **4)** handling munitions nomenclature prediction versus size prediction mismatch; **5)** how to handle polarizability curve similarities; **6)** handling predictions of TOIs from lesser size quality indicators; and **7)** defining indicators of 'success' that are field measurables (condition, size, EZ) from an AGC and safety perspective. Then, upon implementation, what is the feedback from the intrusive investigation teams and/or UXO safety to which unanticipated encounters may lead to additional process improvements.

What this infers are a few important lessoned-learned strategies: implement all the initial planning phase and standard operating procedure phase considerations; modify processes based on unanticipated findings from your current project (i.e., in our case 3--crushed munitions, horizontal offset considerations, vertical classification depth considerations); and account for the value to future projects' (i.e., expedited schedule, reduced hazard impact) of variable EZs relative to complications anticipated and/or guardrails required.