

June 6, 2014

MEMORANDUM TO: Kathy Gibson, Director
Division of Systems Analysis
Office of Nuclear Regulatory Research

FROM: Larry Camper, Director / **R A** /
Division of Waste Management
and Environmental Protection
Office of Federal, State and
Environmental Management Programs

SUBJECT: USER NEED MEMORANDUM - REQUEST FOR ASSISTANCE
IN MAINTAINING THE VISUAL SAMPLE PLAN COMPUTER
CODE

The Office of Federal and State Materials and Environmental Management Programs (FSME) requests assistance from the Office of Nuclear Regulatory Research (RES) in supporting the Visual Sample Plan (VSP) computer code used to provide statistical solutions to sampling design.

Background

VSP is a computer code developed at the Pacific Northwest National Laboratory (PNNL). The code's purpose is to determine the number and location of samples and perform statistical and data quality assessment in support of the decision making process for decommissioning and other health physics applications.

VSP is used by U.S. Nuclear Regulatory Commission (NRC) staff, Agreement States, licensees, and contractors to ensure confident statistically defensible decisions at a variety of facilities. The code has been successfully developed and maintained by PNNL for use by the NRC and its contractors for many years. FSME needs to ensure that VSP is continually upgraded and maintained to meet new information technology requirements.

CONTACTS: Steve Giebel, FSME/RDB
(301) 415-5526

cc: A. Persinko, DURLD
B. Watson, RDB
B. Abu-Eid, DWMEP

Area of Needed Assistance

Task 1: VSP-MARSSIM Methods and Interface Improvements

- Specify maximum size of sampling unit and have VSP grid up the sample area in to that size decision units; apply design to each decision unit
- Add UFP-QAPP Formats for creating/exporting automatically generated VSP reports; automatically populate UFP-QAPP forms.
- Permit sampling of partial walls (e.g. Up to 6 ft under one design, above 6 ft using a different sampling design)
- Automatically create user defined parameter for MARSSIM 3 class definition
- Facilitate breaking a large room (e.g. Large hanger) into smaller zones or decision units with no “walls” between zones/decision units. Define zones according to MARSSIM guidelines (e.g. 100 sq m)
- Modify automatically generated reports to support multiple decision objectives or sampling goals

Task 2: VSP-MARSSIM Expert Guide

- Using the VSP expert guide framework developed for UXO, CBRN, and Rad applications, develop an expert guide for MARSSIM applications that walks the user through the workflow associated with using VSP for MARSSIM sites. Helps the user set up maps, sample areas, etc. in VSP then points them to the right module(s) for their particular objective/use.

Task 3: Incorporation of COMPASS Elements Within VSP

- Review COMPASS code and list VSP duplicative and unique functions
- Incorporate unique COMPASS functions into VSP
- Add VSP new online help and modify VSP report generators with COMPASS related content

Task 4: Rank-Set Sampling Module for MARSSIM Applications

- Explore appropriate use of Rank-Set Sampling (RSS) in MARSSIM Context
- Revise VSP-RSS module (hasn't been updated for 10 years) to ensure appropriate use and make user friendly
- Revise online help and report generators in VSP for RSS

Task 5: Other VSP Enhancements Requested by NRC Class Participants (after completing Task 4 evaluations)

- Methods that combine sampling with scanning
- Sampling Designs for functions or ratios of analytes
- Link photographs to space in building – like Google Earth
- Add minimize button to many screens
- Multiple analyte values for sample symbol assignment
- Redo (in addition to undo) for selected functions

- Automatically add windows on adjacent room walls – like with doors, for interior windows
- Building surface labels – allow sample format like make sample labels
- Surface type labels
- Copy / paste doors and windows. To easily add multiple doors / windows of the same dimensions.
- Type in dimensions of windows / doors

The FSME point of contact for this effort is Steve Giebel, FSME/RDB (301) 415-5526.

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