Federal and NRC Guidance Updates on Radiological Survey and Dose Modeling

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Guidance Updates

- Federal guidance updates
  - MARSSIM Rev. 2
- NRC guidance updates
  - Interim Staff Guidance (DUWP-ISG-02)
  - Update to NUREG/CR-7021

Federal Radiological Survey Guidance—MARSSIM Rev. 2

NUREG-1575, Revision 2
EPA-402-P-20-001
DOE/AU-0002

MULTI-AGENCY RADIATION SURVEY AND SITE INVESTIGATION MANUAL (MARSSIM)

DRAFT FOR PUBLIC COMMENT

Revision 2 May 2020

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Changes to MARSSIM—
Site-specific Scanning Surveys

Changes to MARSSIM—Continuously Collected Data

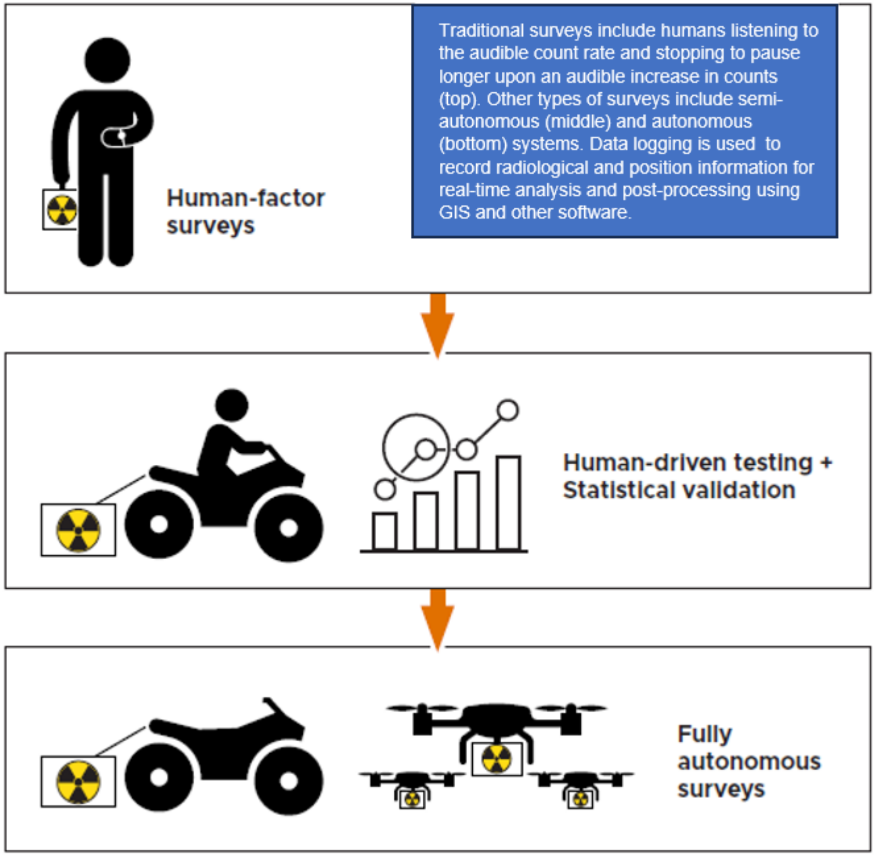
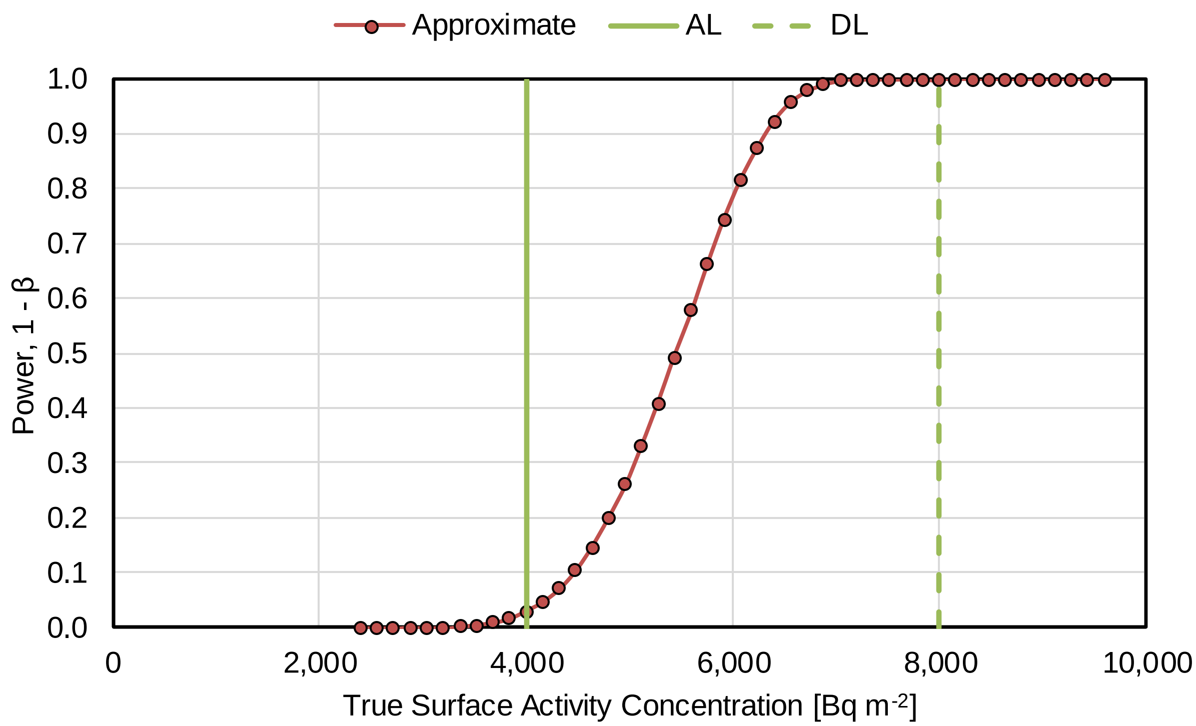


Image Credit: PNNL-SA-157412, Pacific Northwest National Laboratory.

Image Credit: Oak Ridge Associated Universities.

Changes to MARSSIM—Scenario B



Other Changes to MARSSIM—Measurement Quality Objectives

$$u_c(y) = \sqrt{\left(\frac{\partial f}{\partial x_1}\right)^2 u^2(x_1) + \left(\frac{\partial f}{\partial x_2}\right)^2 u^2(x_2) + \cdots + \left(\frac{\partial f}{\partial x_n}\right)^2 u^2(x_n)}$$

NRC Guidance Updates

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DIVISION OF DECOMMISSIONING, URANIUM RECOVERY, AND WASTE PROGRAMS
INTERIM STAFF GUIDANCE
DUWP-ISG-02

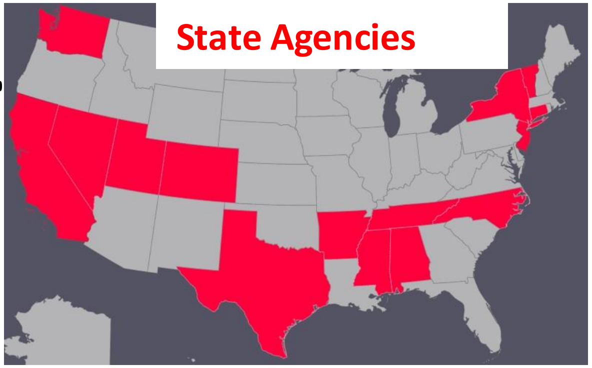
RADIOLOGICAL SURVEY AND DOSE MODELING OF THE SUBSURFACE TO SUPPORT LICENSE TERMINATION

DRAFT FOR COMMENT

Manuscript Completed: June 2023
Date Published: October 2023

Prepared by:

NRC Interim Staff Guidance–Subsurface Investigations



- Two subsurface workshops were held July 2021 and May 2022 with over 160 and 120 participants, respectively
- Technical topics included:
  - Geospatial tools for radiological survey design
  - Dose modeling for subsurface residual radioactivity
  - Consideration of elevated areas
  - NEI groundwater protection initiative
  - Characterization of basement substructures
  - Innovative technologies for subsurface characterization
  - Case studies and lessons learned
- SC&A, Inc. (NRC contractor) issued a draft white paper which was discussed in the workshops
- An interim staff guidance was prepared based on workshop findings and other information
- An update to NUREG/CR-7021 is also in progress

Industry

wood. ANI FPL Geosyntec consultants NEI Southern Company CDI Comprehensive Decommissioning International RSCS BARRICK BHP Southern California EDISON BECHTEL SC&A Exelon Energy Solutions TIDEWATER H3 Environmental EPRI Electric Power Research Institute CURTISS-WRIGHT ENERCON

Federal Registrants

Argonne National Laboratory TVA SRS Savannah River Site Pacific Northwest National Laboratory Oak Ridge National Laboratory Los Alamos National Laboratory NNSA National Nuclear Security Administration

https://www.nrc.gov/waste/decommissioning/whats-new.html

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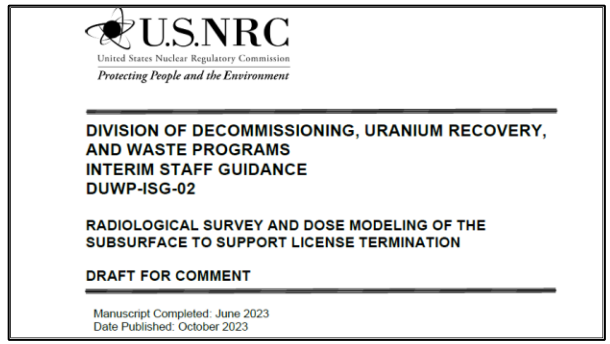
Draft Interim Staff Guidance DUWP-ISG-02

Radiological Surveys and Dose Modeling of the Subsurface to Support License Termination

Extends NUREG-1575 'Multi-Agency Radiation Survey and Site Investigation' (MARSSIM) to the subsurface--addressing surveys of open excavations, reactor basement substructures, and materials planned for reuse among other topics



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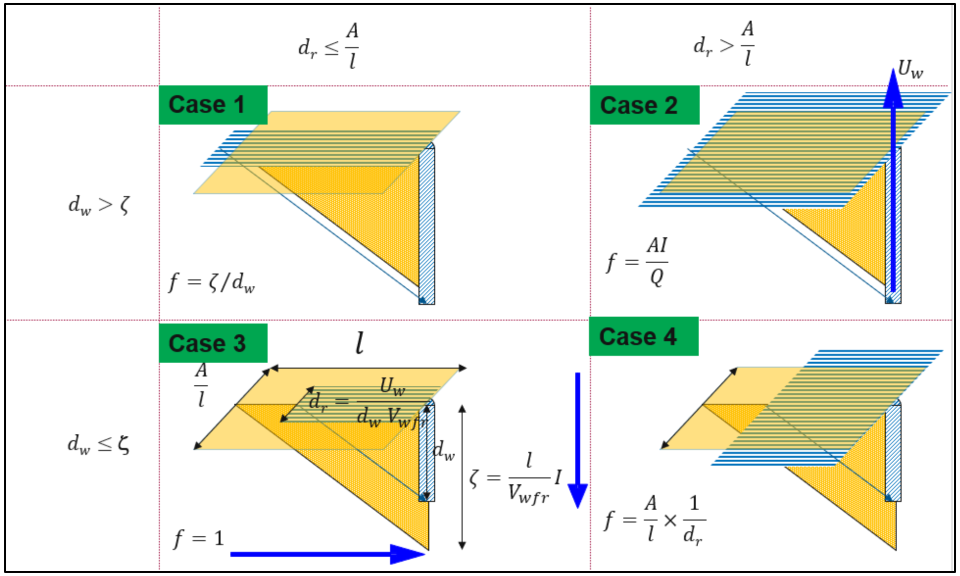
DUWP-ISG-02—
Dose Modeling for Submerged Sources

Addresses guidance gaps for use of commonly used decommissioning dose modeling codes to develop clean-up levels for unsubmerged and submerged sources, including basement substructures



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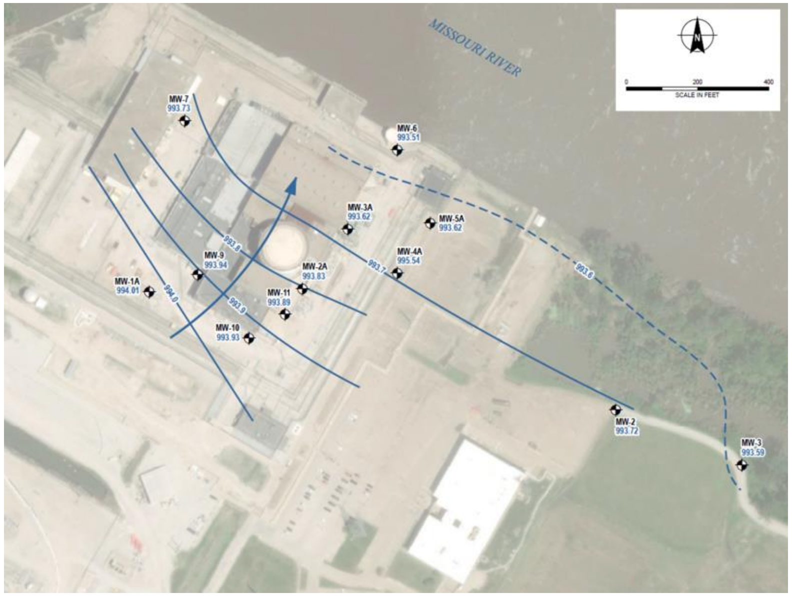
DUWP-ISG-02—
Dose Modeling for Existing Groundwater Contamination

Addresses guidance gaps regarding adequacy of groundwater monitoring networks and assessment of risk from existing groundwater contamination



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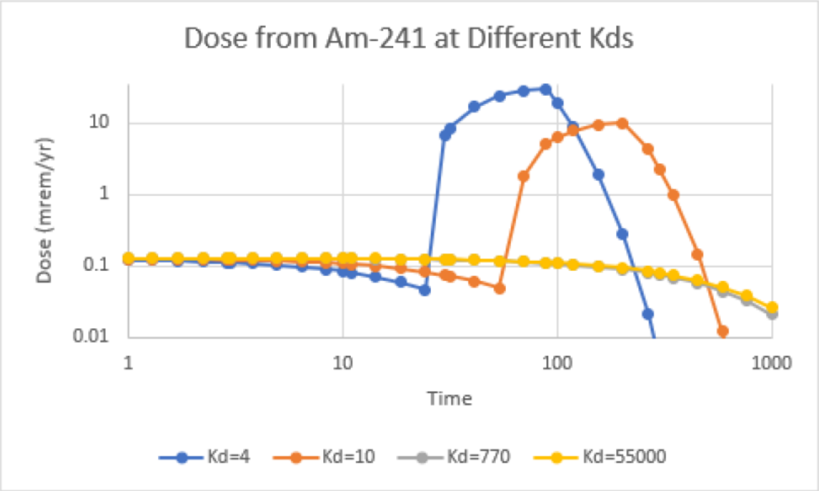
DUWP-ISG-02—
Public Comments

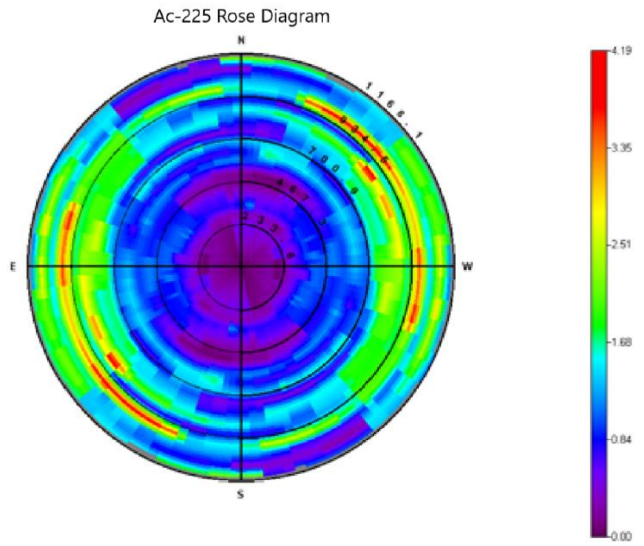
- *Issued in October 19, 2023, with a 60-day public comment period (88 FR 72112)*
- *Comments were due December 18, 2023*
- *12 comments were received including the following:*

1. *Level of survey needed for reuse of offsite materials*
2. *Need for and nature of site-specific support for risk-significant parameters*
3. *Adding realism to assessment of risk from existing groundwater contamination*



DUWP-ISG-02— Next Steps

- *A comment response document will be prepared along to accompany the final DUWP-ISG-02 which is expected to be published in late summer 2024.*
- *The final DUWP-ISG-02 will be incorporated into the next revision of NUREG-1757, Volume 2, Rev. 2.*
- *NUREG/CR-7021 and PNNL's Visual Sample Plan are also being updated.*



You can find the ISG and other related reports on NRC's [What's New in Decommissioning](#) web site.

Thank you

- For additional information please contact the following individuals:

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