

NRC Subsurface Surveys Workshop

July 14 – Day 1

Supported by NRC Staff:

Tom Aird, Office of Nuclear Regulatory Research

Mark Fuhrmann, Office of Nuclear Regulatory Research

Sarah Tabatabai, Office of Nuclear Regulatory Research

Ken Hamburger, Office of Nuclear Regulatory Research

Cynthia Barr, Office of Nuclear Material Safety and Safeguards

Workshop Objective

We want your ideas, perspectives, and experience with characterizing and surveying subsurface contamination

Is this “Subsurface MARSSIM”? → No

Today's Agenda, July 14

10:05 - 10:20	NRC Introduction	Tom Aird, NRC
10:20 - 11:20	Overview of Guidance on Surveys for Subsurface Radiological Contaminants + Q&A	Carl Gogolak, SC&A, Inc.
11:20 - 12:00	NEI Presentation + Q&A	Bruce Montgomery, Nuclear Energy Institute (NEI)
12:00 - 13:00	1-hour break	
	Discussion Topic: Geospatial and Statistical Methods	
13:00 - 13:30	EPRI presentation: Experiences with Geospatial and Statistical Based Surveys of Subsurface Soil	Richard Reid, Electric Power Research Institute (EPRI)
13:30 - 14:00	PNNL Presentation	Pacific Northwest National Laboratory (PNNL)
14:00 - 14:10	10-minute break	
14:10 - 15:50	Open Discussion on the evaluation of sites with geospatial and statistical methods: -Applicability of MARSSIM statistical tests and other methods -Treatment of uncertainty and data sufficiency. -Methods to determine the sample density, spatial distributions, depths, and volume to achieve a level of confidence and limit decision errors	
15:50 - 16:00	Daily Wrap-up	

Tomorrow's Agenda, July 15

10:00 - 10:30

EPA Presentation: MARSSIM Subsurface Background

Industry Presentation: A Graded Approach to Subsurface Characterization and Remediation and Related Tools and Methods

10:30 - 11:15

Discussion Topic: Subsurface DCGLs

Presentation(s):

Cynthia Barr, NRC/NMSS

Charlie Yu, Argonne National Lab

Open Discussion

11:15 - 12:30

Discussion Topic: Subsurface Hot Spots

Presentation(s):

Cynthia Barr, NRC/NMSS

Carl Gogolak, SC&A

Open Discussion

12:30 - 13:30

1-hour break

Discussion Topic: Surveys of subsurface, including surveys of excavations, backfill materials, suspect areas, and hard-to-access areas

13:30 - 15:00

Presentation(s):

Bruce Watson, NRC/NMSS

Matthew Wright, California DPH

Claude Wiblin, SC&A (10-minute talk)

Open Discussion

15:00 - 15:15

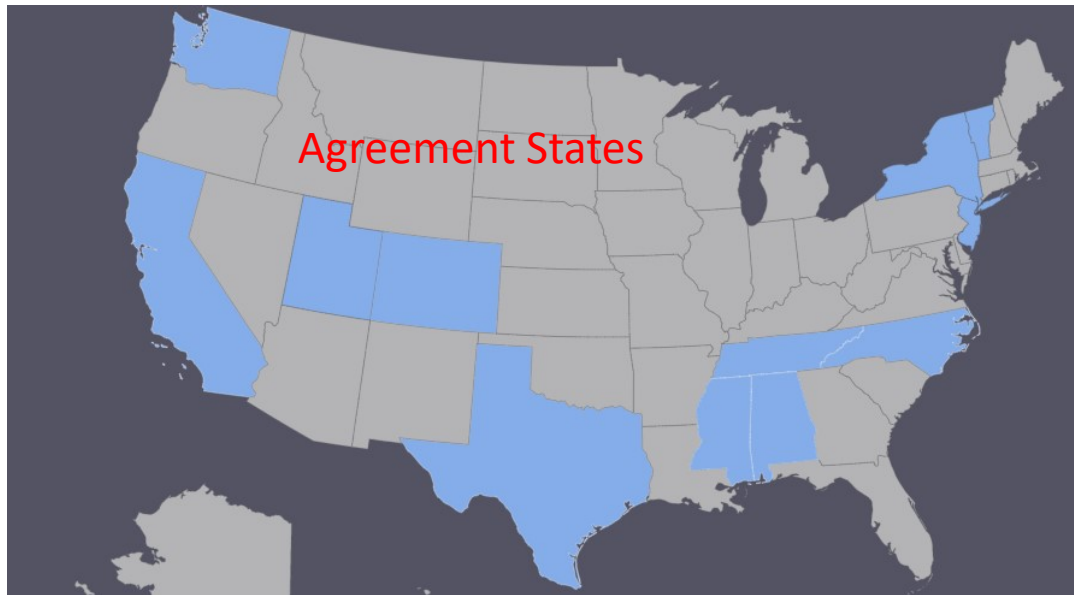
15-minute break

15:15 - 16:00

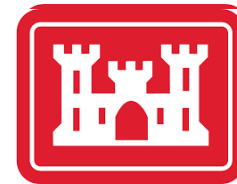
Open Discussion on subsurface survey topics including but not limited to:

- Dose calculations for backfill materials; DCGLs for contaminants in the subsurface
- Applicability of Scenario B for subsurface residual radioactivity
- Methods to survey large subsurface soil excavations

Attendance Snapshot



Federal agencies registered:



Also:

125+ total registrants

20+ registrants from commercial companies

4+ DOE National Laboratories

3+ international registrants



Helpful Background Info

Public meeting website:

<https://www.nrc.gov/pmns/mtg?do=details&Code=20210553>

nrc.gov/pmns/mtg?do=details&Code=20210553

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Meeting info

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is holding a public workshop on the technical basis for guidance on conducting and evaluating surveys of residual radioactivity in the subsurface soils of licensee sites. The NRC began to address this problem in NUREG/CR 7021, "A Subsurface Decision Model for Supporting Environmental Compliance," issued January 2012.

Docket Numbers - Facility Names

Related Documents

[ML21123A229 - Guidance on Surveys for Subsurface Radiological Contaminants - Executive Summary](#)

[ML21158A248 - 07/14/2021 Subsurface Soil Surveys Public Workshop](#)

Comments

This will be a virtual-only meeting and attendance will be via Microsoft Teams (links to be provided at a later date). Parties interested in attending should contact the meeting organizer to be added to the attendee list and to get webinar details. Meeting organizer: Thomas Aird, thomas.aird@nrc.gov



 **Spotlight**

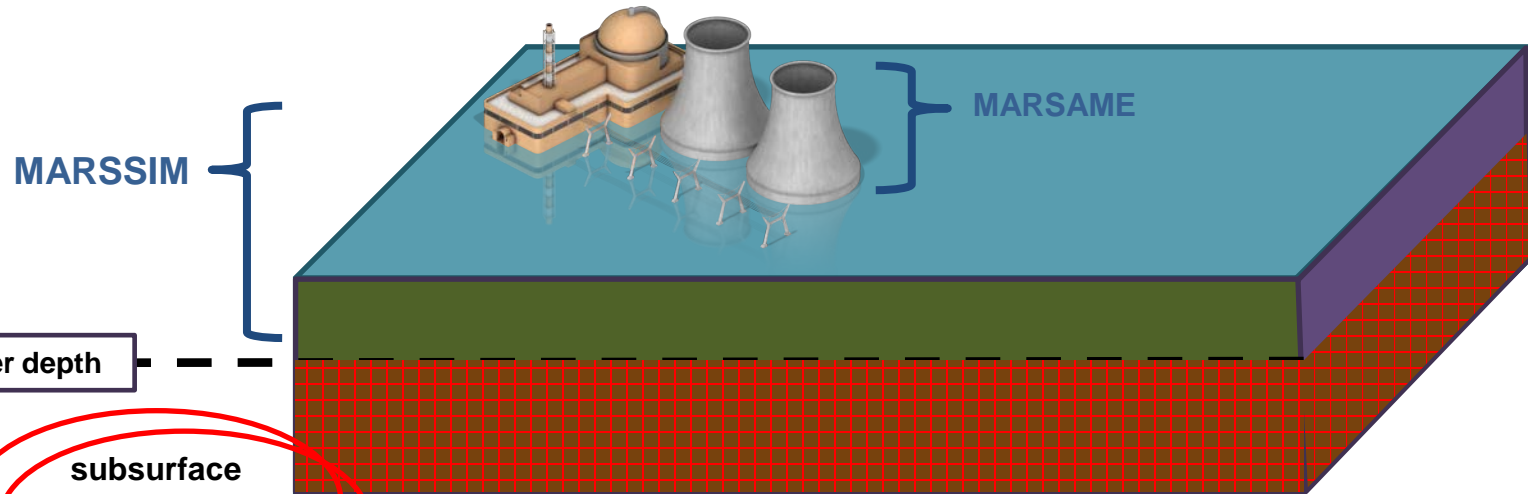
Workshop Motivation

Workshop Objective: we want your ideas, perspectives, and experience with characterizing and surveying subsurface contamination

Workshop Motivation?

- More sites are being rapidly decommissioned instead of entering SAFSTOR
- These sites are complex and expected to contain areas of residual radioactivity in subsurface soils
- These facilities will need to be surveyed and a determination made as to the need for subsurface remediation.

A simple illustration of the issue...



15-centimeter depth

subsurface
(below 15 cm)

MARSSIM = Multi-Agency Radiation Survey and Site Investigation Manual
MARSAME = Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual

New NRC guidance may be needed to provide licensees with acceptable approaches to subsurface surveys...

This is not a new issue

- NRC Office of Nuclear Material Safety and Safeguards (NMSS) has already reviewed and approved many decommissioning licensee applications
- Some of these applications had subsurface contamination
- What we propose did not exist then, so what did licensees and NMSS do instead?
 - Employed a case-by-case approach → very fact specific





Prior NRC guidance

- NUREG/CR-7021 (January 2012)
 - A Subsurface Decision Model for Supporting Environmental Compliance
- NUREG-1757, Volume 2, Revision 1
 - Consolidated Decommissioning Guidance: Characterization, Survey, and Determination of Radiological Criteria
 - Volume 2, Revision 2 has been issued as a draft report for comment
- NUREG-1575, Revision 1
 - Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)

RESEARCH PROCESS

Guidance on
Subsurface
Contamination
Surveys



-  **1** NRC Licensing Office Requests Assistance
Guidance is needed to provide licensees with acceptable approaches to subsurface surveys
-  **2** Research project proposed and awarded
Statement of work drafted by NRC staff for subsurface surveys research proposal
-  **3** NRC and Contractor develops technical basis
NRC and SC&A Inc. develops technical basis document(s) with NRC staff **and public input**
-  **4** NRC staff drafts guidance
RES and NMSS staff write NUREGs, Regulatory Guides, or other guidance documents to support licensee subsurface surveys

Thanks again for attending!

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