



EPA's Role in the Site Remediation and Cleanup Program at SRS

Jon Richards, SRS Federal Facility
Agreement Remedial Project Manager &
Radiation Expert, U.S. EPA

What does the EPA do at SRS?

- Our job is to protect human health and the environment
- At SRS we are the federal regulator over the cleanup of hazardous waste sites
- We work with Department of Energy as the lead and South Carolina as a co-regulator
- We work to get SRS CLEANED UP!

Savannah River Site



- Cleanup activities were initiated under a RCRA permit in 1985
- Final NPL listing 11/21/89
- FFA effective 8/16/93
- 310 square miles (198,737 acres)
- 515 waste units
- 99 Operable Units

EPA ID: SC1890008989

Acct #: 04W2OX00

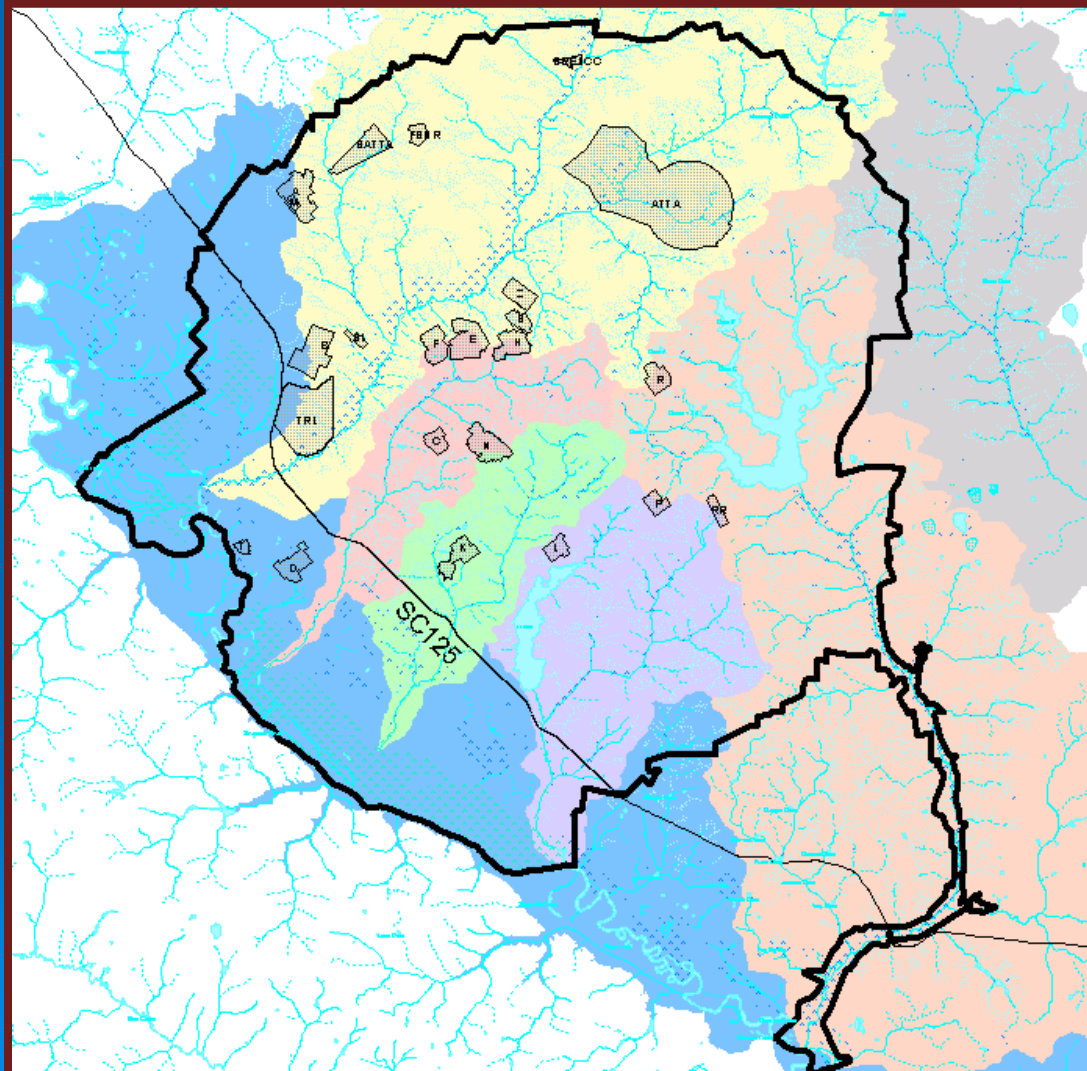
SRS Site Description

- 310 square mile DOE Facility
 - Near Savannah River and Aiken, South Carolina and Augusta, Georgia
- Section 120 of CERCLA
 - EPA, DOE and SCDHEC coordinate remedial activities
- 6 Watersheds of the site



Areas of SRS
P,R,L,C,K –
reactor Areas

F, H – central
HLW tanks
Areas





EPA SRS Team

- Jon Richards – RPM & FFA Manager
- Jana Dawson – RPM
- Brianne Martin – RPM
- Technical Support: TechLaw & EPA's Tech Support
- - Community Involvement Leader



EPA SRS Team Support

- Hydrogeologists (Bei Huang)
- Risk Assessor (Adam Friedman)
- Radiation Risks (Jon Richards)
- Attorney (Stephanie Johnson)
- TechLaw – Regional Oversight Contract
 - Document Review, Field Oversight, Meeting Support



Overview

- Introduce EPA
- Origin of Superfund
- How Superfund applies to SRS
- EPA's involvement in SRS remediation program



United States Environmental Protection Agency (EPA)

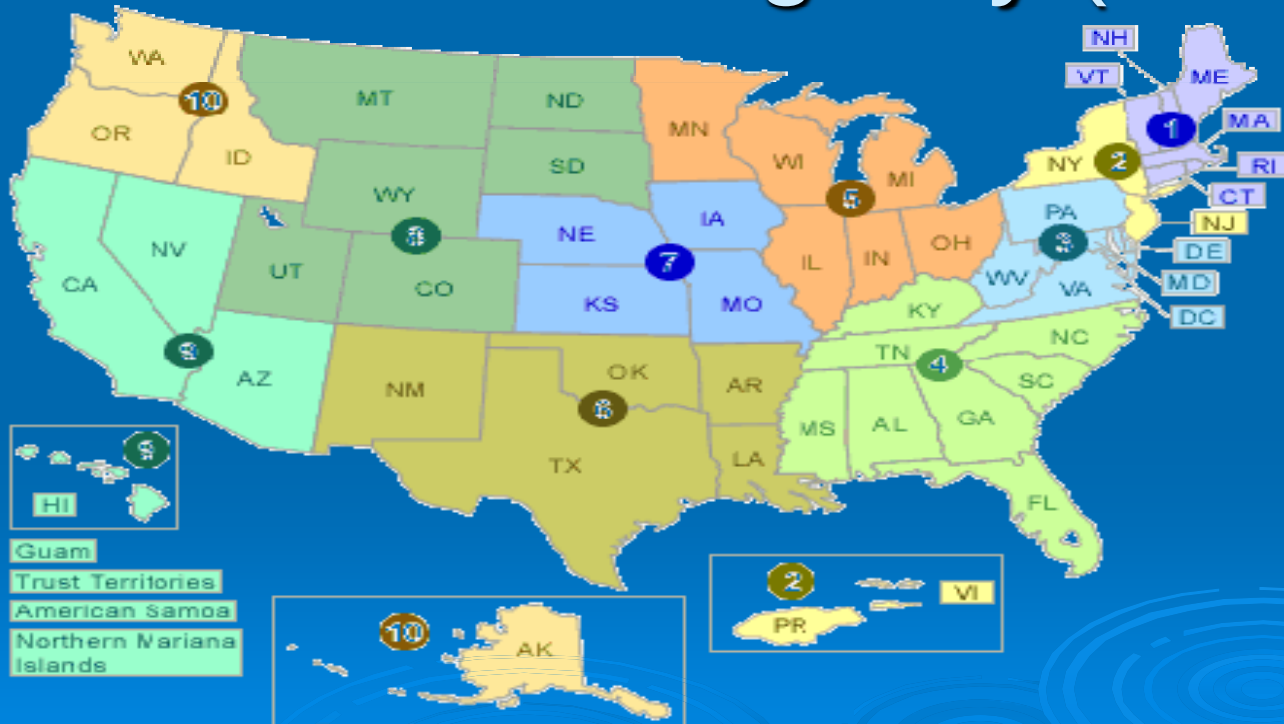
mission:

*To protect human health and
the environment*

- Independent agency formed in 1970
- Congress writes environmental laws
- EPA writes regulations to implement laws
- EPA enforces regulations
- EPA sets national standards



United States Environmental Protection Agency (EPA)





Federal Statutes for Cleanup of Federal Facilities

- CERCLA
- RCRA
- Oil Pollution Control Act
- Safe Drinking Water Act
- Clean Water Act
- Clean Air Act



Origins of Superfund

CERCLA: Comprehensive Environmental Response Compensation and Liability Act (Superfund)

Became law in 1980

Amended in 1986



Origins of Superfund

- “Reactive” law, addressing previously contaminated sites
- Established in response to disasters like Love Canal, NY and Valley of the Drums, KY
- **CERCLA** provides authority for the federal government to respond to releases or threatened releases of hazardous substances



National Contingency Plan

- National Contingency Plan (NCP) is the set of implementing regulations – “rules”
- Procedures for conducting CERCLA response actions
- Establishes the risk level that triggers clean up action



CERCLA at Federal Facilities

Executive Order 12580 (1987):

- Delegates to DOE and DoD the responsibility to implement certain provisions of CERCLA
- Makes DOE and DoD the “lead agency”
- Federal facilities must follow policies and procedures as spelled out in the NCP
- EPA either concurs with remedies proposed by lead agencies or picks another appropriate remedy



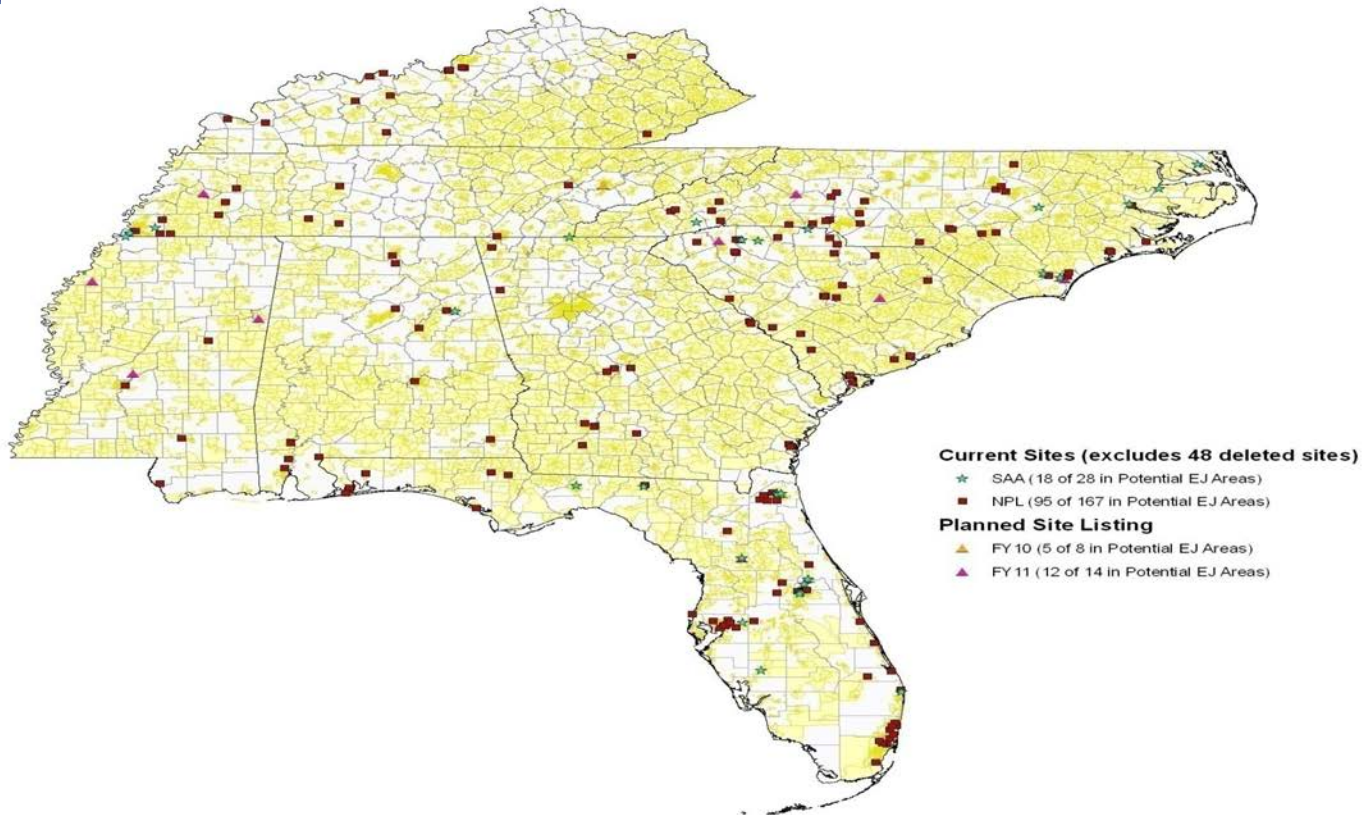
CERCLA at Federal Facilities

Federal Facilities (DoE, DoD, etc.) are subject to CERCLA requirements similar to private entities

Note -- Radionuclides are also addressed with other hazardous substances under general EPA CERCLA guidelines [Clean Air Act]



National Priorities List



Superfund National Priority List (remedial) sites: Number and Perspective for Radiation sites

- ◆ 1,304 NPL sites
 - » 66 are radiation sites – but as many are DOE sites, they are the largest sites, with multiple Operable Units
- 59 more sites proposed for NPL
 - » 1 is a radiation site
- ◆ 1,124 NPL sites are “construction completion”
 - » 38 are radiation sites
- ◆ 360 Sites have been deleted from NPL
 - » 9 are radiation sites

How to Address Radiation in a Chemical Program?

- ◆ With only 66 radioactively contaminated sites out of 1,304 total, the original focus of the Superfund remedial program has been on chemicals.
- ◆ Question: So how best address radiation?
- ◆ Answer: Address radiation in a consistent manner with chemicals, except to account for the technical differences posed by radiation
 - » Radiation easily fits within Superfund framework [fatal cancer risks]
 - » Improves public confidence by taking mystery out of radiation



Why Does Radiation Easily Fit within the Superfund Remedial Program's Framework?

- ◆ Primary effect from radionuclides is cancer [uranium is the only exception]
- ◆ People ingest, inhale, eat, same amount of contaminated dust and food whether it is chemical or radioactive contamination
- ◆ Dust gets resuspended the same whether it is chemically or radioactively contaminated
- ◆ Inorganic elements move the same way through the subsurface, or the body, whether they are radioactive or not

CERCLA Cleanup Levels

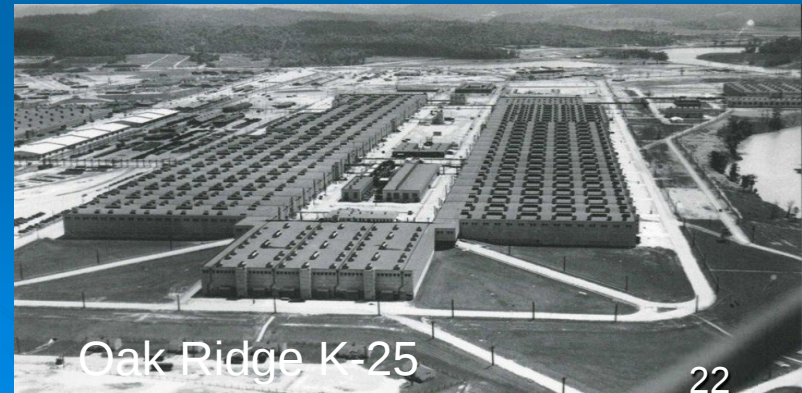
- ◆ Applicable or Relevant and Appropriate Regulations [ARARs] often determine cleanup levels at Superfund sites
- ◆ Where ARARs are not available or protective, EPA sets site-specific cleanup levels that
 - » For carcinogens, represent an increased cancer risk of 1×10^{-6} to 1×10^{-4}
 - 10^{-6} used as “point of departure”
 - Preliminary Remedial Goals are established at 1×10^{-6}
 - » For non-carcinogens, will not result in adverse effects to human health (hazard index (HI) <1) [e.g. uranium]
 - » Higher radiation global and natural background is accounted for





Department of Energy Facilities in EPA Region 4

- Savannah River Site – South Carolina
- Paducah Gaseous Diffusion Plant - Kentucky
- Oak Ridge Reservation – Tennessee
- Closed: Pinellas Plant – FL (RCRA FDEP lead)





Savannah River Site

- Added to the Superfund National Priorities List – December 1989
- SRS required to have a Federal Facilities Agreement (agreement with State & EPA)



SRS - Federal Facility Agreement

August 1993

Three party agreement (DOE, EPA, SCHEC)

- Governs investigation and remediation program
- Roles and responsibilities of each party
- Schedules and deadlines
- Enforceable milestones, penalties
- Procedures to working together
- Dispute resolution



EPA's Role

- Oversight of remedial actions at SRS
- Ensure adherence to the NCP, CERCLA, FFA, guidance
- Technical and procedural assistance
- Information, guidance, training

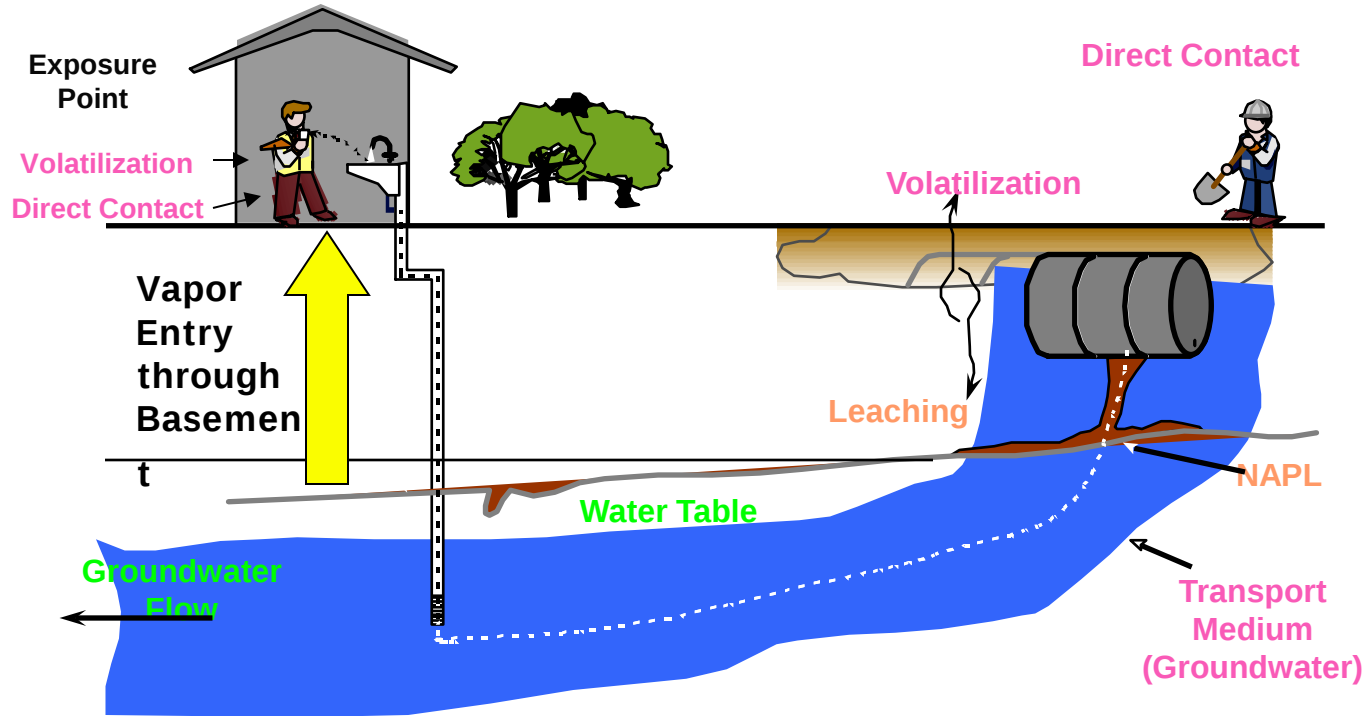
Investigation Process

- ◆ Begins with site discovery
- ◆ Investigate the site
- ◆ Soil, sediment, groundwater, air, & surface water sampling
- ◆ A Risk Assessment determines the danger the to the public
- ◆ We decide how to clean up the site



**Groundwater
Sampling**

How people can be impacted





EPA's Role

EPA and SCDHEC concurrence required:

- Select of remedies (Record of Decision)
- Implement remedies
- Operate remedies
- Determine success of remedies

Involvement – early & often –

- Process leading up to selecting remedies
- Designing and installing remedies
- Monitoring and evaluating effectiveness of remedies



EPA Decision Process:

Remedial Project Manager level

- EPA RPM involved in remedial process === via the Core Team and Scoping process
 - Collaborate sampling and monitoring plans
 - Conduct site visits and inspections, field oversight
 - Review data
 - Review documents
 - Comment on documents and resolving issues
 - Ensure adherence to NCP, EPA guidance
 - Participate in meetings, teleconferences, team work
 - Consider public input

- EPA RPM integral in identifying preferred remedy(ies)



EPA Decision Process:

EPA Management Level

- EPA Management and EPA HQ:
 - consider proposed remedies
 - ensure national consistency and adherence to NCP, national guidance
 - ensure that plan has State concurrence
 - give approval to proceed with Proposed Plan
- EPA RPM represents the SRS Core Team's decisions



EPA Decision Process:

Superfund Division Director

- Proposed Plan issued to the public by DOE (approved by EPA and SCDHEC)
- DOE writes the Record of Decision, considering public comments (core team participation)
- DOE signs the Record of Decision
- EPA signs the ROD
- SCDHEC signs the ROD



EPA Involvement Continues

➤ Ensure remedy is:

- designed and constructed according to plan
- achieving the objectives outlined in the ROD
- protective of human health & environment

➤ Regular effectiveness monitoring

➤ **5 Year Remedy Reviews**

- EPA management and HQ involved in findings, and follow-up to 5-year reviews
- Indefinite 5YRs for most DOE sites



Three Party Decisions

Decision Documents “belong” to DOE,
SCDHEC and EPA

EPA must sign a ROD for it to be final
per the requirements of the NCP



Collaboration

- Team work approach employed to ensure meeting all FFA requirements while streamlining and accelerating process
 - Core Team (EPA/SCDHEC/DOE)
 - Scoping meetings (Core Team+Contractors)
 - Design teams – special topics
- Requires dedication and commitment from each of the three parties



Current Activities and Projects

- FFA commitments
- High Level Waste Tanks
- D Area (coal ash & gw)
- C Area (groundwater)
- P Area (groundwater)
- T Area (TNX groundwater)
- R Area (groundwater)
- A Area Units (vapor extraction)
- LLWD Facility (E Area)
- Lower Three Runs/PAR Pond
- Steel Creek—Dunbarton Bay
- CMP Pits (groundwater)
- G Area Oil Seepage Basin
- 5 year remedy reviews (ongoing)
- Field oversight
- CAB

The Cleanup at SRS

- It's been going on since the 1980s
- It will continue another 30+ years
- SRS employees 1000's of people
- Cleanup involves not just radiation and chemicals
 - There is office work, maintenance, etc.
- Jobs that require college and jobs that require only high school
- All require a clean record

How Can I Get Information?

- EPA Website – www.epa.gov/superfund
- SRS Website – www.srs.gov
- EPA Community Involvement Coordinator for SRS
 - Angela Miller (404) 562-9073



Questions



Jon Richards
USEPA - Region 4
Superfund Division
61 Forsyth Street
Atlanta, GA 30303
[404] 431-1340
Richards.jon@epa.gov