

EPRI Radiation Safety Program



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EPRI Chemistry & Radiation Safety Program

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EPRI

ABOUT US

Founded in 1972, EPRI is the world's preeminent independent, non-profit energy research and development organization, with offices around the world. EPRI's trusted experts collaborate with more than 450 companies in 45 countries, driving innovation to ensure the public has clean, safe, reliable, affordable, and equitable access to electricity across the globe. Together, we are shaping the future of energy.



EPRI

KEY

ASPECTS



Nonprofit

Chartered to serve the public benefit, with guidance from an independent advisory council.



Thought Leadership

Systematically and imaginatively looking ahead to identify issues, technology gaps, and broader needs that can be addressed by the electricity sector.



Independent

Objective, scientific research leading to progress in reliability, efficiency, affordability, health, safety, and the environment.



Scientific and Industry Expertise

Provide expertise in technical disciplines that bring answers and solutions to electricity generation, transmission, distribution, and end use.



Collaborative Value

Bring together our members and diverse scientific and technical sectors to shape and drive research and development in the electricity sector.



EPRI

ONLINE MEDIA



Public Website

www.epri.com



LinkedIn

Electric Power Research Institute (EPRI)



X

@EPRINews



YouTube

Electric Power Research Institute



EPRI Journal

www.eprijournal.com

COLLABORATION

EPRI's collaborative platform is unrivaled. Our R&D:

- Leverages your research dollars
- Connects you to a global network of peers
- Accelerates deployment of technology
- Mitigates the risk and uncertainty of going it alone
- Positions you as a leader in addressing industrywide challenges

CREDIBILITY

EPRI's independent research is guided by our mission to benefit the public. We offer:

- Objective solutions
- A proven track record
- Scientifically based research you can trust

Who We Are

EPRI is a non-profit organization that performs research to advance safe, reliable, and environmentally responsible energy for the public benefit.

**\$420M
Annual
Global
R&D**

Our Members

EPRI members represent 90% of the electricity generated and delivered in the United States, with international participation extending to 45 countries.

EXPERTISE

For nearly 50 years, EPRI has been applying R&D to help solve real challenges. With EPRI, you can:

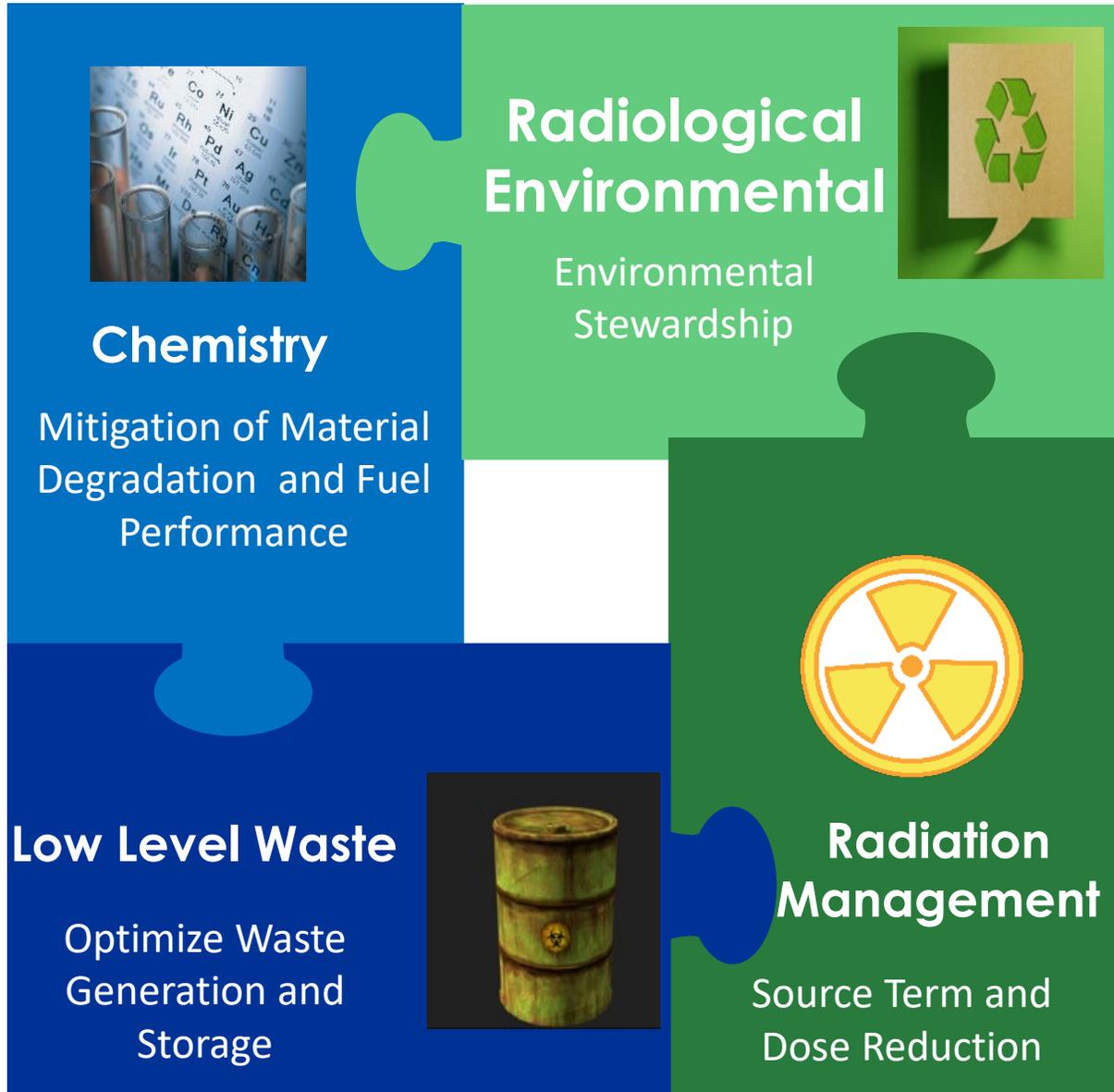
- Reduce expenses and increase productivity
- Be more resilient today and better prepared for tomorrow
- Access an industry repository of collective experiences, technical expertise, and training resources
- Extend your staff and make your teams more robust and more confident
- Benchmark, learn and share best practices
- Increase your awareness of challenges that others are facing and alternate solutions to challenges you might be facing
- Save time and money troubleshooting problems EPRI and its stakeholders have seen before



Chemistry & Radiation Safety Program Overview

Chemistry-Radiation Safety Program

“Empowering the future of nuclear energy through innovative chemistry and radiation practices”



Collaboration

- Global network of peers
- Technical exchange and benchmarking
- Leveraged R&D

Cumulative Expertise

- Knowledge of control history
- New technology development for tomorrow
- More than 20 years of plant data

Credibility

- Technically based and objective guidance
- Widely applied Guidelines
- Identify and apply best options

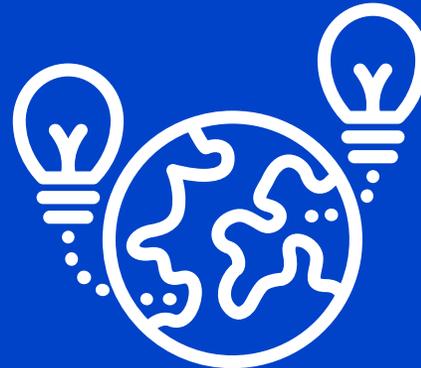
Continuing Strategic Focus

Modernization



- Better data, optimized resources
- Technology to support management of staffing needs

Advance the Science



- New technology applications
- Understanding current observations and ways to mitigate issues

Data & Analytics



- Identify for new trends and lessons learned
- Expand applicability
- Facilitate technology transfer

EPRI Radiation Safety Guidelines and Sourcebooks

Personal Contamination Events [3002014502](#), Rev. 2 (2019)

Guidelines for Industry Response to Personnel Contamination
Revision 2.0

- Technically based action levels for incidents of personnel contamination
- Guidance for documentation, tracking and trending of program effectiveness
- CBT Available

Alpha Monitoring & Control [3002000409](#), Rev. 2 (2013)

EPRI Alpha Monitoring and Control Guidelines for Operating Nuclear Power Stations, Revision 2

- Risk-informed, graded approach to monitoring alpha emitting radionuclides
- Details on how to protect and train workers

Radioactive Material Monitoring & Control [1019224](#), Rev. 0 (2009)

Radioactive Material Monitoring and Control Guideline

1019224

Final Report, December 2009

- Technically based monitoring and unrestricted release of personnel, equipment, and materials
- Guidance for instrument calibration and performance checking
- Methods for addressing hard-to-detect radionuclides

Remote Monitoring Technology [3002005480](#), 2015 Rev.

Remote Monitoring Technology Guide for Radiation Protection
Field Implementation of Remote Monitoring, 2015 Revision

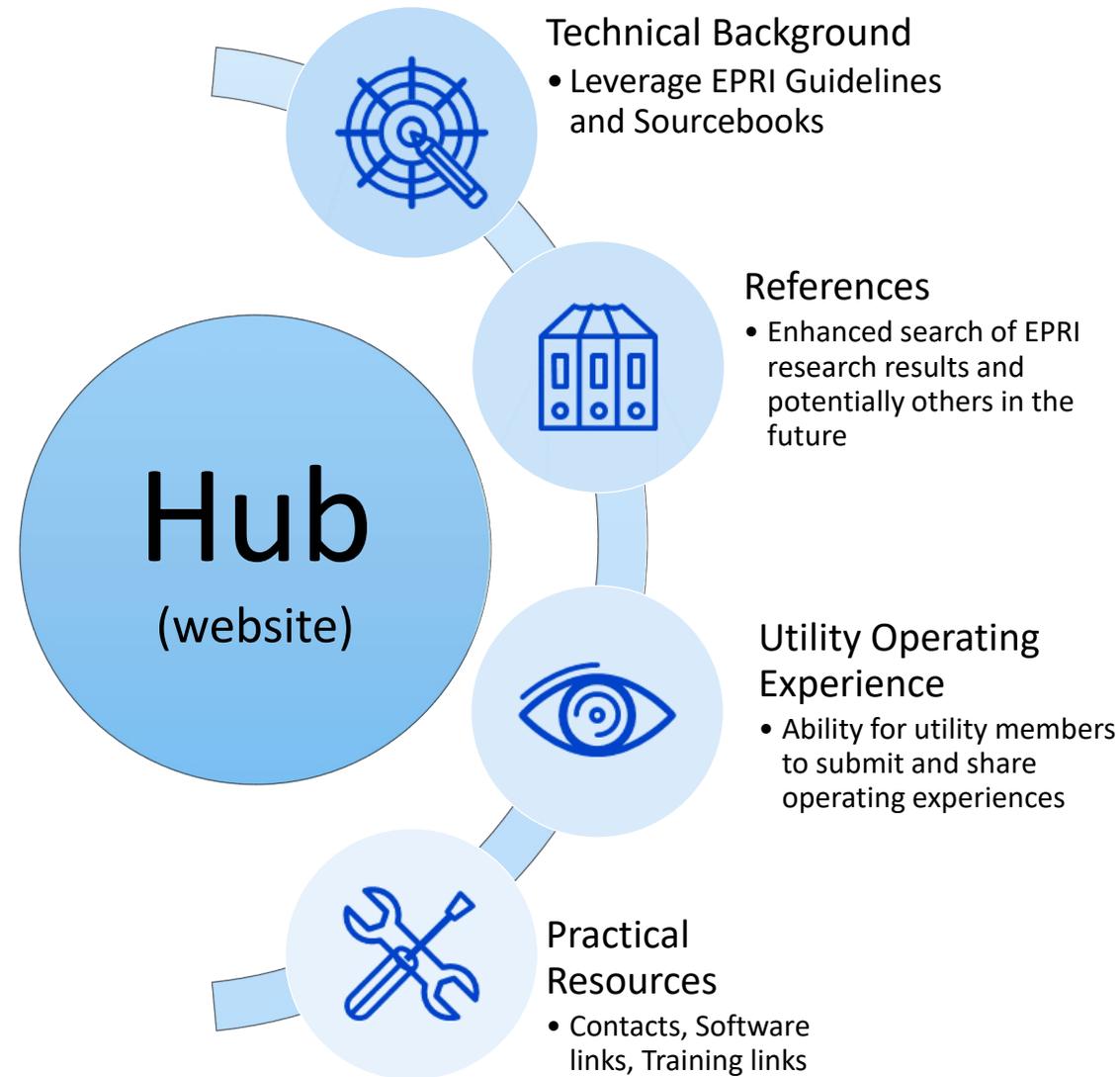


- Consensus based guidance for an effective RMT program to support radiological controls including specific actions, equipment capabilities, or personnel.
- OE based items that have resulted in a significant and undesirable outcome

Guidance to Optimize Management of Worker Exposure

Chemistry-Radiation Safety Hubs

New Online Resource for Technology Transfer and OE Sharing



Current Content

- Chemistry
 - Nuclear Chemistry Hub
 - Training list
 - Contacts
 - Condenser Leakage
 - <https://nuclearchemistryhub.epri.com/>
- Radiation Safety Hub
 - RP for Fuel Cladding Defects
 - <https://radsafetyhub.epri.com>
- Radwaste Hub
 - Radwaste Characterization
 - Liquid Radwaste
 - Shipping & Transportation
 - <https://radwaste.epri.com>
- Groundwater Effluents Hub
 - Observations from Groundwater Assessments (GWEP TSG)
 - <https://gwrep.epri.com>

Content Under Development

- Chemistry
 - Nuclear Chemistry Hub
 - Dispersant Use OE
 - BWR Startup/Shutdown OE
 - Stator Cooling
- Groundwater Effluents Hub
 - Resources for Implementing Groundwater Protection Guidelines (Base)

Chemistry and Radiation Safety Team



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Advanced Reactors



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Oversight, Decommissioning,
LILW, and Radiation Safety



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Environmental Protection,
Effluents, Groundwater, and
Radiation Monitors



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PWR Chemistry



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New Technologies, Advanced
Reactors, PWR & BWR
Chemistry

Chemistry and Radiation Safety Team



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Databases and
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PWR Chemistry,
Open and
Closed Cooling
Chemistry



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PWR Secondary, Open
and Closed Cooling
Chemistry, MULTEQ,
Stator Chemistry



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Chemistry Software, BWR
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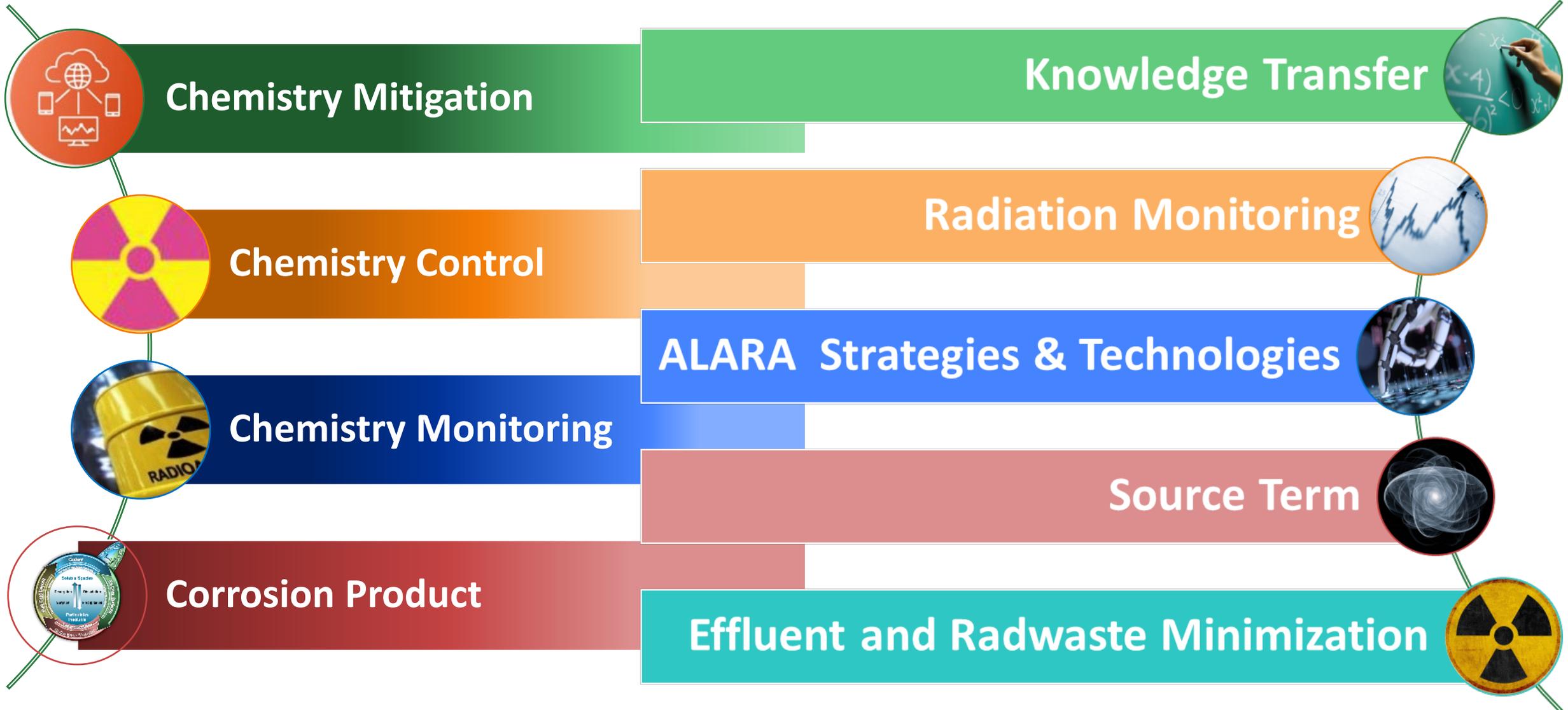
BWR Chemistry,
Auxiliary and Resin

A Few Notes

- All Nuclear Base Members have access to Chemistry & Radiation Safety Base Program Results
 - Up until 2023, Chemistry & Radiation Safety were two different programs
 - Starting 2024, Chemistry & Radiation Safety is one program
- Member utilities can also sign up for supplemental Technical Strategy Groups (TSGs) where they have access to additional research and assessments

2026-2027 Chemistry and Radiation Safety Research Focus Areas

R&D RFAs – Normal Prioritization



Chemistry and Radiation Safety Guidelines and Fundamental Research

Guideline Maintenance:



Fundamental Research Not Prioritized

SRMC Web, V (3002015914), <https://srcm.epri.com>

RadBench, V 3.4 (3002003994), <https://radbench.epri.com>

CMA Web, Version 4.0 (3002017886), <https://cma.epri.com>

Benchmarking and Trending (Fundamental)

Parameter	Deaerator Outlet No. 1	Condenser	Condenser Vert	Hotwell (CPD)	Pollster Effluent
pH@	6.84779	9.15651	9.14489	9.22714	6.80266
pH@	5.77046	6.88190	6.88193	6.88168	6.80228
pH(25°C)	9.44613	9.38238	9.93851	9.45317	7.00031
pH(25°C) w/o cations	6.96246	6.99389	6.99964	6.95261	6.99952
Specific Conductivity (uS/cm)	6.79458	6.11919	23.63106	6.90183	0.05485
Cation Conductivity (uS/cm)	0.05705	0.05518	0.05485	0.05772	0.05486
Ionic Strength	2.02874E-05	2.47037E-05	2.40478E-05	2.91144E-05	1.57883E-07
Saturated Steam Pressure (bar)	6.18154	0.04740	0.04740	0.04740	0.06448
Precipitate Fraction	N/A	N/A	N/A	N/A	N/A
OAc (ppm)	1.01348E-03	1.07110E-03			
HCO2 (ppm)	5.29120E-06	3.93809E-06			
NH3 (ppm)	5.00000E-01	6.10393E-01			
NH4 (ppm)	1.00000E-01	1.74813E-01			
Ela (ppm)	2.00000E+00	1.03055E+00			

Modeling (Fundamental)

Considerations for Portfolio Development

- Member engagement is not limited to the key engagement opportunities. Regular meetings (in-person and virtual), Technical Strategy Group (TSG), and other industry meetings
 - Membership challenges:
 - New Reactor Designs
 - New Fuel Designs
 - New or Different Chemistry Regimes
- EPRI Decommissioning Program
 - Units transition into decommissioning are now starting backup
 - Nuclear vs. Generation:
 - How can we leverage the generation knowledge and experiences that may aid in nuclear decommissioning technologies
 - Identify the gaps and common technologies to build the portfolio

Project Ideas – Where or Who Generates the Ideas?

- EPRI is consistently looking for research ideas from members and staff throughout the year
- If a member has a research idea, they can email it to chemistryRS@epri.com at any time during the year
 - As appropriate EPRI Staff will reach out to individuals that submitted the request
- Reminders for submitting research ideas will be sent out in December and January
- Based on these ideas, the potential portfolio is developed for prioritization

Key Engagement Opportunities



Key Chemistry and Radiation Safety Initiative Updates

Radioactive Material Shipper



- Project started in January 2025
- RP CFAM Working Group has agreed to act as Management Review Committee
- Primary challenge:
 - Compiling industry shipping procedures and training materials

COMPLETED ACTION FROM FEB. 2024

- Technical Working Group of Shipping SMEs formed

KOH for PWR Primary pH Control



- Transitioned to Fall of 2026 for Sequoyah Unit 2
- Safety Evaluation (50.59) and Engineering Change Package completes
- Primary Challenge to implementation:
 - Effluent dose coefficients.
 - Addressing regulatory concerns

Completed Actions –Dose coefficient determination completed and under final review.

Moisture Carryover (BWR)



- Moisture carryover (MCO) is affecting more BWRs as core designs become more efficient
- Concerns: Exposure and spread of radionuclides carried over in steam + effects of excess moisture on plant components
- Collaborative effort – Chemistry, Core Design/Reactor Engineering, Radiation Safety & Materials Engineering to develop mitigating actions

2026-2027 Chemistry-Radiation Safety R&D Proposal

Funded

Newly Funded

Unfunded

Chemical Mitigation

Hydrazine Alternatives
(2018-2025)

Amines as an O₂ Scavenger
in PWR/PHWR Steam
Generator
(2026 – 2027)

SG Wet Layup and
Reducing Agent in
PWR/VVER Steam
Generators (SGs)
(2026 – 2027)

ALARA Strategies & Technologies

RP for Advanced Reactors
(2025-2026)

Chemistry Control

KOH
(2017-2030)

Moisture Carryover
(2025-2026)

MOFs for Elevated
Temperatures
(2025-2026)

Sourcebook to Support AL2
and AL3 Required Technical
Reviews
(2026 -2027)

Effluents & Radwaste Minimization

KOH (Ongoing)

Initial RW Shipper Training
(2026-2027)

RW Management Considerations
for PWRH
(2026-2027)

Spent Resin Degradation
Behavior Study and Predictive
Tool
(2026 – 2027)

Alpha Monitoring in Groundwater
(2025-2026)

Evaporator Sourcebook
(2026 – 2027)

Waste Optimization SW, Outage
water Management Planning,
SFP Tell-Tail Drain, and Oxidation
of Hydrazine by Hypochlorite

Chemistry Monitoring

Extended Power Uprate at
PWRs
(2025-2026)

Evaluation of the Design,
Operation, and
Maintenance of Sample
Systems in AR

2026-2027 Chemistry-Radiation Safety R&D Proposal

Funded

Newly Funded

Unfunded

Source Term

Impact of Ultrasonic Fuel
Cleaning on Radiation Source
Term
(2024-2026)

Evaluating Adjustment Factors
for the Estimation of
Radioisotope Concentrations in
Light-Water SMRs
(2026 -2027)

Corrosion Products

Filming Product Qualification &
Application
(2018-2026)

PWR Secondary Side Dispersant
Sourcebook, Rev. 2
(2024-2028)

Pressurized Water Reactor
Secondary Side Filming Product
(FP) Application: Focused
Operating Experience (OE)
Assessments
(2027-2028)

Knowledge Transfer

Radwaste Hub

Dispersant Application Wiki

Radiation Monitoring & Dosimetry

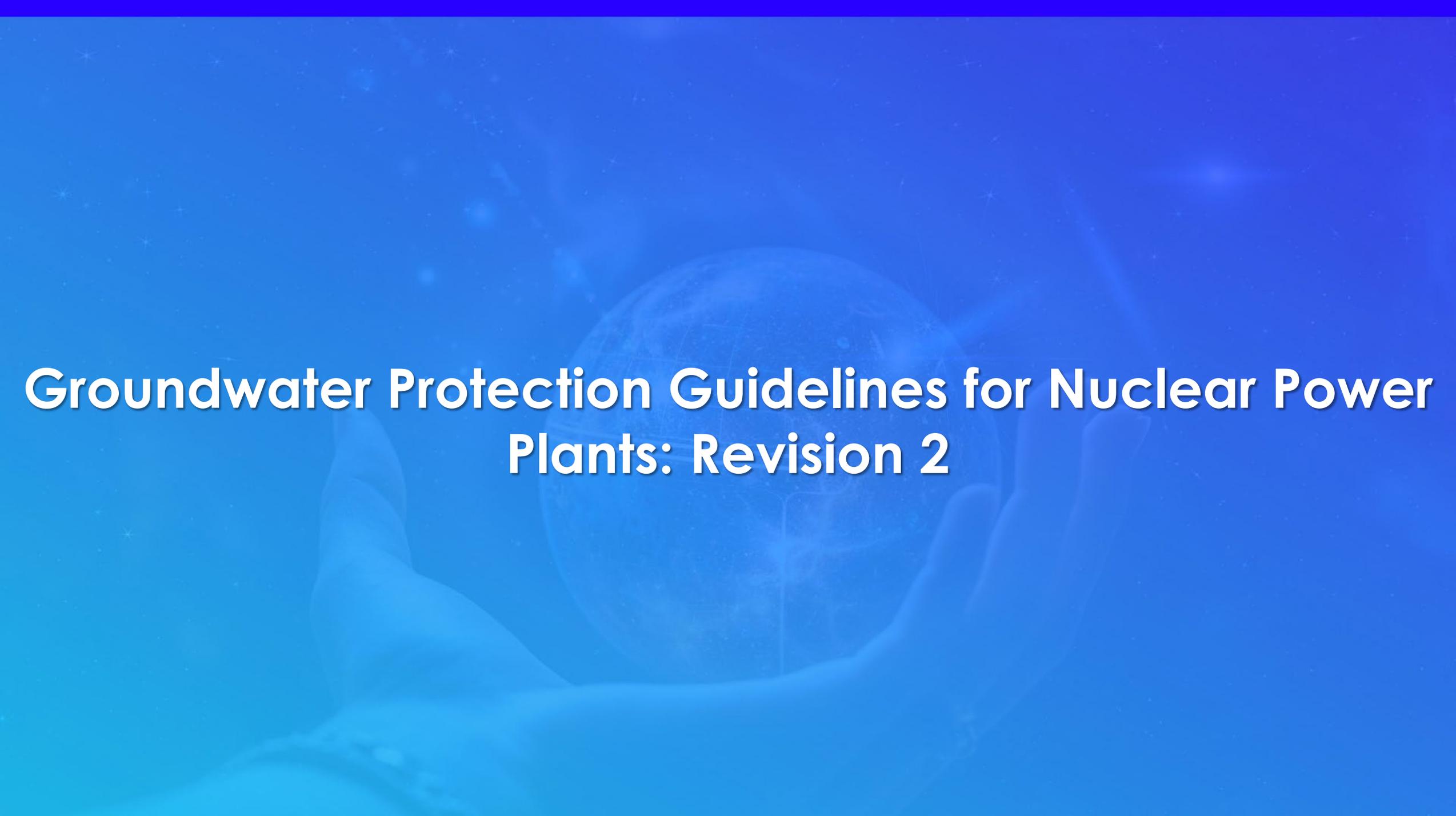
RMS Paper Completion
(2024-2027)

Occupational Radiological Air
Sampling Guidelines
(2026 – 2027)

Technical Basis for Passive
Bioassay Monitoring Using Portal
Monitors



Highlights



Groundwater Protection Guidelines for Nuclear Power Plants: Revision 2

Groundwater Protection Guidelines for Nuclear Power Plants: Revision 2 (2024)

- Provides comprehensive technical guidance for implementing a robust, on-site groundwater protection program
- Guidelines developed in collaboration with Utility Committee
 - Utility Consensus Document
 - For U.S. utilities supports implementation of NEI 07-07 “Industry Ground Water Protection Initiative – Final Guidance Document”, Action 1
- Originally published in 2007.
 - Revision 1 published in 2013.
 - **Revision 2 published October 2024 (EPRI Report 3002029324) →**
- Revised EPRI Groundwater Protection Guidelines based on:
 - Industry operating experiences, lessons learned, best practices
 - Advances in science and technology
 - New EPRI Research
 - Updated policies, regulations, etc. (as applicable.)

Key Revisions

1. Re-organized Guidance – Program Initiation versus Maintenance
2. Removed “ELEVATED” Guidance Statements
3. Enhanced System, Structures, and Components (SSC) & Work Practice Risk Mitigation Guidance
4. Guidance Statement & associated guidance added on soil sampling and analysis
5. Added additional guidance on responding to a leak or spill or detection in groundwater event
6. Added Guidance Statements associated with Remediation Planning
7. Provide additional information related to Decommissioning



Revision of Radiation Protection Related Guidelines

Revision of Radiation Protection Guidelines Update (2024-2025)

Alpha Monitoring & Control

[3002000409](#), Rev. 2 (2013)

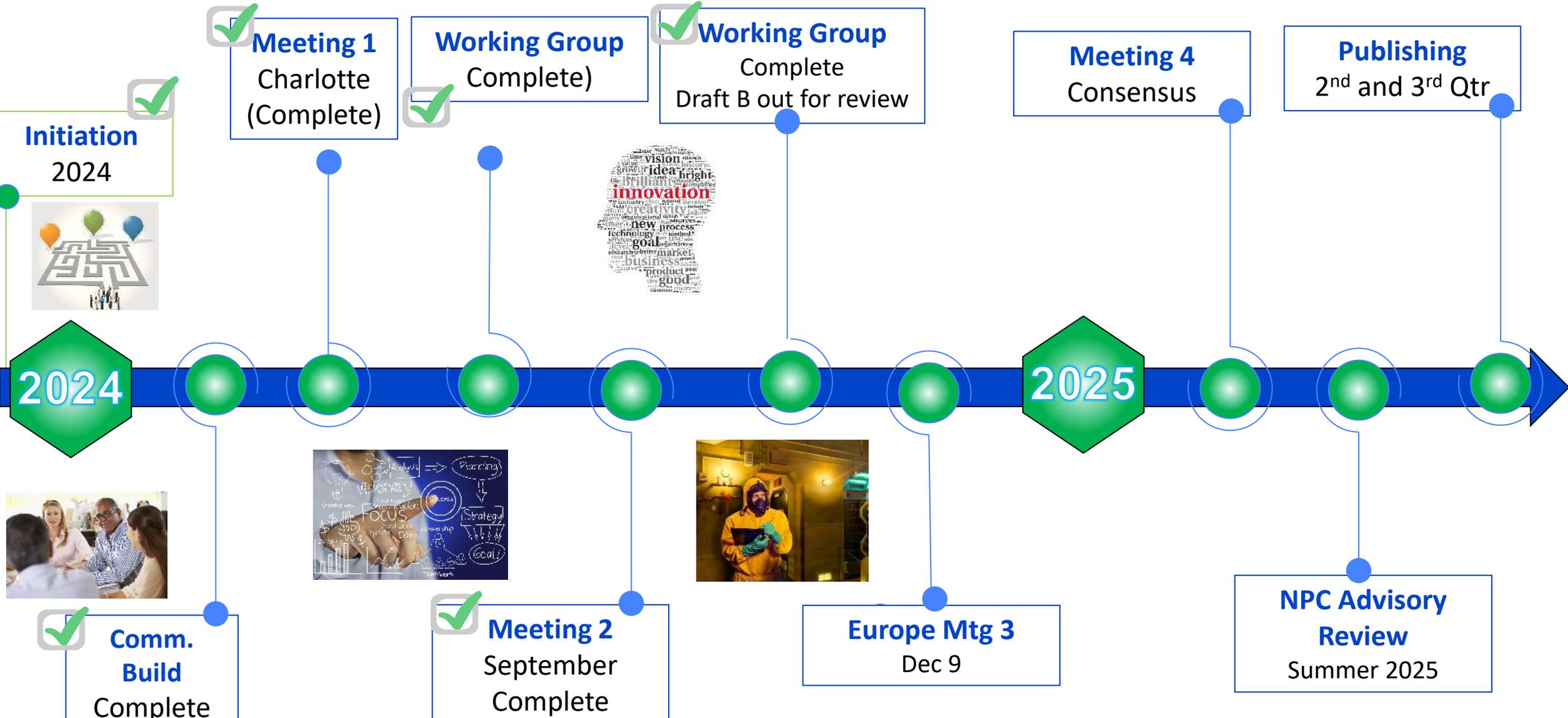
- The classification of Alpha Areas is changing from a system based on the ratio of derived air concentration (DAC) values, to one that is based on the alpha contamination present in the areas.
- Criteria for when to obtain alpha smears and air samples has been simplified to ensure that samples are obtained in a consistent manner.
- A defined risk-based approach to work planning in alpha areas was developed, with the corresponding recommendations for the protective measures to be implemented based upon a classification of the area.
- Example instruments used in the industry are provided as a reference for sites when considering the instrument to use to perform alpha analysis

Radioactive Material Monitoring & Control

[1019224](#), Rev. 0 (2009)

- Updated the guidance for:
 - monitoring of personnel, equipment, and materials for unrestricted release from radiologically controlled areas (RCAs) and protected areas at nuclear power plants.
 - monitoring of personnel for contamination at the exits from contaminated areas, RCAs, satellite RCAs, and protected areas, using various types of automated and non-automated instruments
- Added several new sections to the guideline:
 - Section 3: Control of Radioactive Materials to identify practices to label and mark RAM, establish RAM storage areas, inspect containers stored outside, and control of sealed sources
 - Section 5: Added common instruments used in the industry for surveys materials
 - Appendix D – which provides guidance for commonly released items to establish the minimum survey requirements

Radiation Protection Guideline Revision Timeline



Plan is Publish No Later than Third Quarter 2025

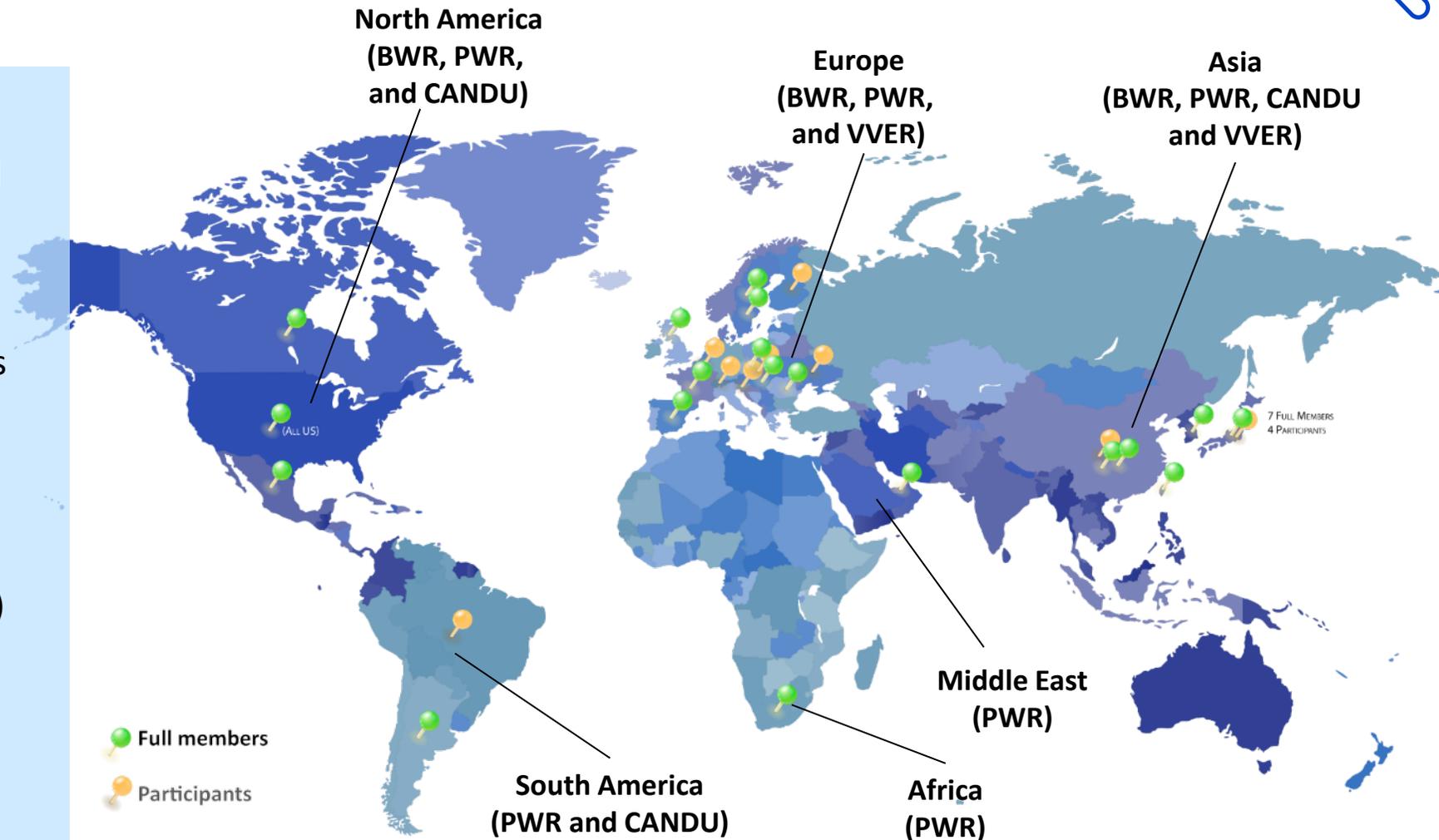


Chemistry & Radiation Safety Databases & Webtools

Chemistry and Radiation Safety Databases



- Collects vital information for benchmarking, assessments, and many cross-disciplinary projects across the nuclear sector
- Data collected for more than 20 years, 1700 cycles and 200 plants
- Integrated into other EPRI program tools
 - Fuel Reliability Database (FRED) and Steam Generator Degradation Database (SGDD)
- Online member-accessible provides immediate benchmarking capability



Participation is the Key to Success

Database Web Applications – *On-Demand* Utility Benchmarking

EPRI ELECTRIC POWER RESEARCH INSTITUTE

Data Submission Templates
 Industry Quartiles
 User Manual with Tutorial
 Archive of Graph PDFs
 Resources & Acronyms

BWR

- RRS Dose Rate Overview
- Impact of Plant Design
- Impact of Heater Drain Design
- Impact of Chemistry Regime
- Impact of Co-60
- Plant History

Please read: Notes on functionality

SRMC Webtool - Standard Radiation Field Monitoring

EPRI ELECTRIC POWER RESEARCH INSTITUTE

Overview

Global Trend Global Distrib

Utility: Electric Power Research Inst
 Site: Electric Power Research Inst Fle

Site Details:

Unit Name	Unit Type	Number of Loops
No data to display		

Data Type: Solid Waste Data

Graph Type:

- Facility Trend
- Industry Trend
- Benchmark By Year
- Quartile Performance

Graph Grouping: Yearly

4 NWC GEs (no DZO) add
 1 HWC GE added in Janua
 1 HWC GE added in July 2
 1 HWC GE removed in Jul
 1 ASEA GE added in June
 1 ASEA GE added, 1 US r
 11 fewer plants reported da
 15 fewer plants reported da
 5 fewer plants reported dat

Summer 2020
 25 BWR plants in report, 2
 9 plants reported in this cy
 Global Fleet median: 84 ml
 U.S. median: 79 mR/h (0.7

Important Note: Some entries for the three data points listed below for years prior to 2016, may not reflect "as-generated" amounts and therefore may impact the accuracy of reported/graphed results.

- Class A or Low Level Waste (LLW) Filter Elements, Membranes, Septa and other non-flowable media
- Class B/C or Intermediate Level Waste (ILW) Filter Elements, Membranes, Septa and other non-flowable media
- Evaporator Concentrates

It is recommended that for graphs or reports related to these data points, the data table provided as output below each graph be reviewed for obvious inconsistencies.

Contact [Nikki Delse](#) for additional clarification if required.

SRMC Web, V (3002015914), <https://srmc.epri.com>

EPRI ELECTRIC POWER RESEARCH INSTITUTE

RadBench Web Application

Home Input Data Graphs Reports Contacts Settings About

Solid Data Category: As-Generated Waste Amount Status: All Units: lbs

Data Field: You can select a maximum of 10 fields

- GIC, Bulk Survey for Release, or other
- Nonmetal DSW
- Metal DSW
- Class B/C DSW
- Other Dry Solid Waste (not special p
- Total Dry Solid Waste

Start Year: 2015 End Year: 20

Exclude Zero Values Normalize b

EPRI RadBench Report - Ele

Electric P

As-Generated Waste Amount

Data Source: EPRI RadBench Database

RadBench, V 3.4 (3002003994), <https://radbench.epri.com>

EPRI ELECTRIC POWER RESEARCH INSTITUTE

Chemistry Monitoring and Assessment Database

Graphs and Reports

Select Plant Type: BWR Select Data Type: Parameter Median Benchmarked By Site - Most Recent Cycle Select Parameter to Graph: FFW_Cu-T

FILTERS OPTIONS NOTES

Region: Zinc Added: Chemistry Regime: BWR Model: Condensate Polishing Type: Sites:

Show All Show All Show All Show All Show All Show All

BWR - Median FFW_Cu-T (ppb) - Parameter Median Benchmarked By Site - Most Recent Cycle

CMA Web, Version 4.0 (3002017886), <https://cma.epri.com>

Engaging with EPRI Chemistry & Radiation Safety Program

- CFAM participation
 - Project prioritization process
 - Research Integration Committee (RIC) Meeting
 - **Ensure technical staff is engaged**
- Technical Groups
 - Technical Strategy Groups (TSG)
 - BWR Chemistry
 - PWR Chemistry
 - Radiation Management and Source Term (RMST)
 - Low and Intermediate Level Waste (LILW)
 - Groundwater and Environmental Protection (GWEP)
 - Guidelines and Sourcebook Review/Revision Committees
- Additional help as requested
 - Billable Service Agreement
 - Technology Application Process



**Supplemental
Technical Strategy Groups**

Radiation Safety Working & Technical Strategy Groups

Karen Kim-Stevens (KKim@epri.com)

- Groundwater and Environmental Protection Technical Strategy Group
- Groundwater Protection Guidelines Revision Committee

Darcy Campbell (DACampbell@epri.com)

- Low and Intermediate Level Waste Technical Strategy Group
- Initial Shipper Qualification Program

Borja Bravo (BBravo@epri.com)

- Optimized Dosimetry
- Digital Twin

Jeff Cady (JCady@epri.com)

- Radiation Management & Source Term Technical Strategy Group
- Radiation Monitors

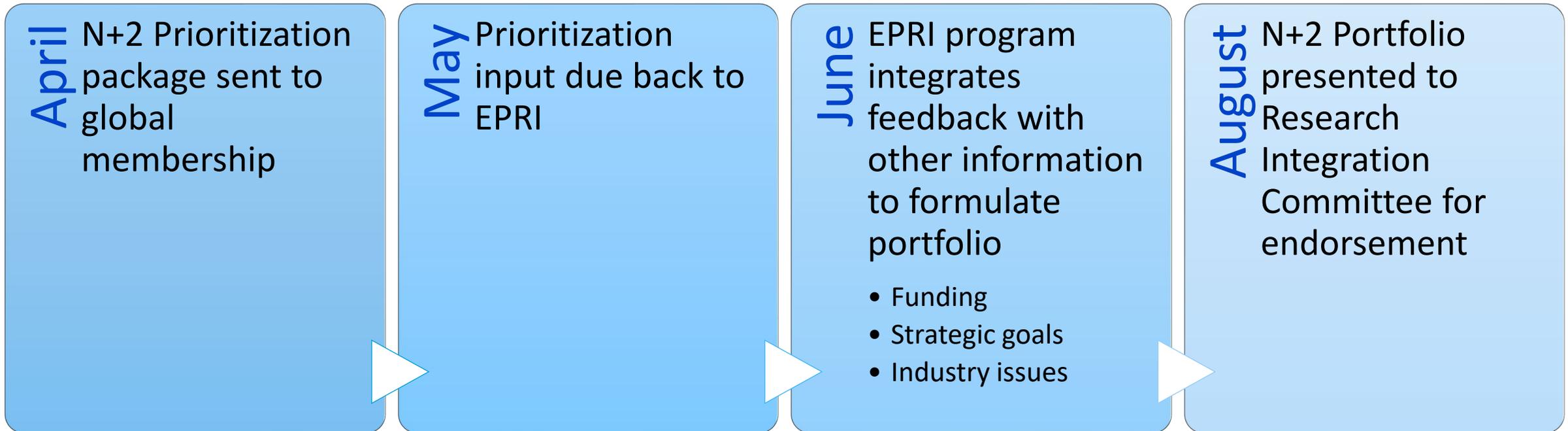
David Perkins (DPerkins@epri.com)

- Alpha Monitoring Guideline Revision
- Rad Material and Control Guideline Revision



Longer-term, standardized research planning approach

- The EPRI Nuclear Sector has standardized research planning and prioritization processes since 2015
- All research portfolio planning is on a two-year (N+2) planning cycle and work is grouped into Research Focus Areas (RFA)



Package will be sent to all Chem/RP Managers as we want to make sure they are engaged but it will be sent without voting attached instead asked to feed up to RIC representative

Radiation Safety – Technical Strategy Groups

TSG Membership:

- Site specific application of EPRI research and tactical support
- 3-Yr commitment basis
- *One site assessment included*



Radiation Management and Source Term TSG

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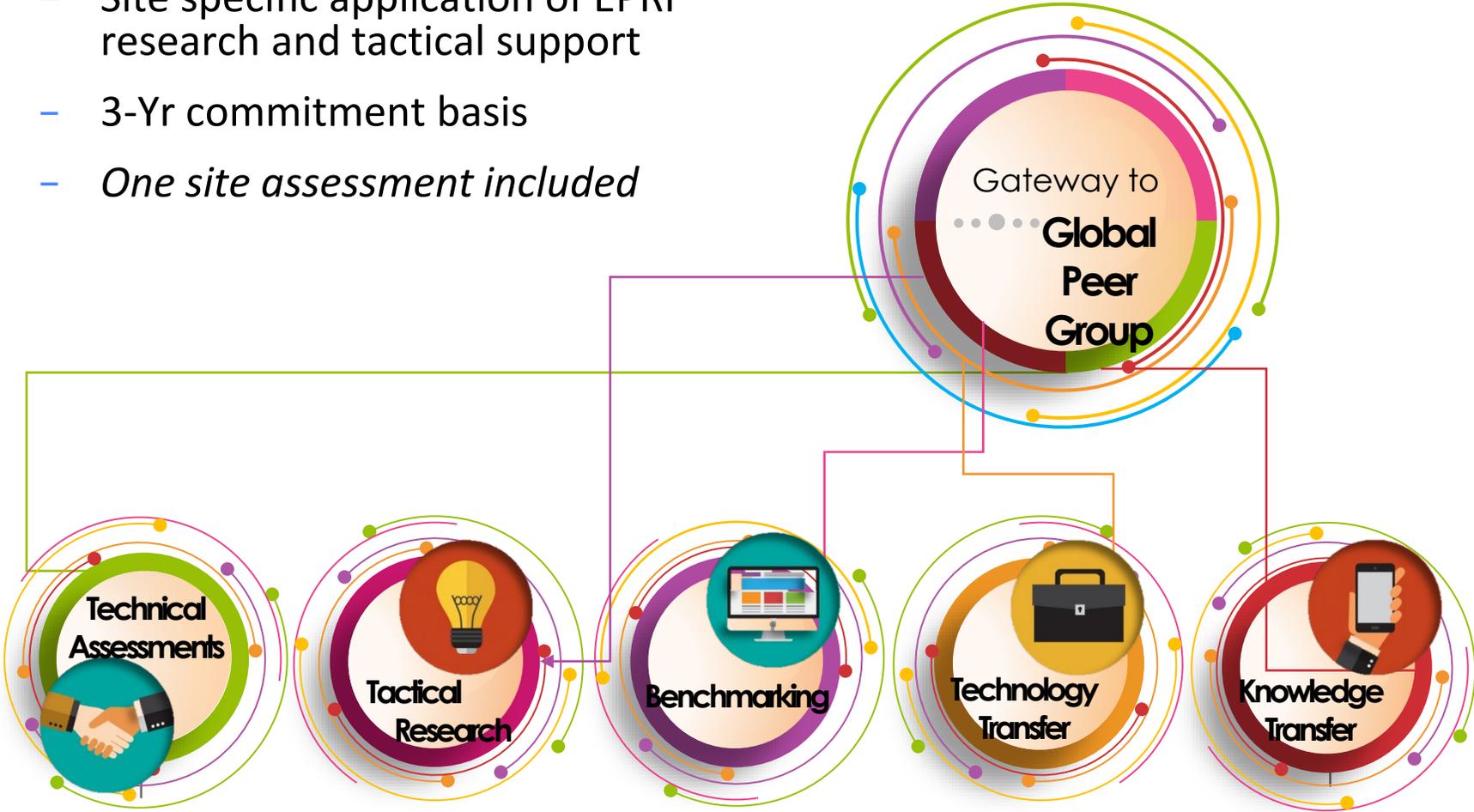
Low and Intermediate Level Waste TSG

Darcy Campbell, dacampbell@epri.com



Groundwater & Environmental Protection TSG

Karen Kim-Stevens, kkim@epri.com



Radiation Management & Source Term Technical Strategy Group

2024 Members

Axpo Power AG

CANDU Owners Group

CGN Power Co. Ltd.

China National Nuclear Power Company, Ltd.

Comision Federal de Electricidad (CFE)

Constellation Energy Generation, LLC

DTE Energy

Duke Energy Corp.

Emirates Nuclear Energy Corporation

Energys Services, Inc.

Entergy Services, LLC

Korea Hydro & Nuclear Power Co., Ltd.

Nebraska Public Power District

Pinnacle West Capital Corporation

PSEG Nuclear, LLC

Rolls Royce SMR

Shandong Nuclear Power Company

Southern Nuclear Operating Co.

Talen Energy Corporation

Tennessee Valley Authority (TVA)

Vistra Operations Company LLC (VOC)

Activities

- Webcasts and Workshops to facilitate technical discussions and knowledge sharing
- Benchmarking Support
- Collaboration Website

Assessments

- ALARA Assessment (by unit or site)
- Radiation Source Term Assessment (by unit or site)
- Remote Monitoring Technology Assessment (by site)
- Alpha Monitoring Assessment (by Site)
- Customized: Work with the project manager and define the assessment

Research

- Ultrasonic Cleaning of Piping & Other Components (2022-2023)
- Locked High Area Access Control Best Practices (2022-2023)
- David Besse Zn Injection Experience (2017, 3002010655)
- Optimal Shielding Program Guidance (2014, 3002003165)
- Radiological Hot Spot Experiences (2014, 3002003158)
- Chemical Decon Experience (2012, 3002000555)

Low and Intermediate Level Waste Technical Strategy Group

Activities

- 4 Webcasts/year
- Access to LILW TSG Collaboration site
- Member specific assessment / training
- LILW TSG Research
- Training and Knowledge Transfer

2024 Training Sessions

- Radiochemistry for Waste Management
- Waste Characterization
- Liquid Radwaste Fundamentals

2024 Research Projects

- Outage Optimization for Radwaste
- Comparison of Waste Characterization Sampling Methods
- Demonstration of Nano Bead Filtration Media
- Irradiated Hardware / Spent Fuel Pool Cleanout Handbook

2024 MEMBERS

Ameren	CGN Power Co.
CFE (Laguna Verde)	Constellation
DTE Energy	Duke Energy
Emirates Nuclear Energy Corporation (ENEC)	Entergy
Korea Hydro & Nuclear Power Co. (KHNP)	Nebraska Public Power District (NPPD)
Pinnacle West (Palo Verde)	Southern Company
STP Nuclear Operating Company	Tennessee Valley Authority (TVA)
Vistra / Energy Harbor	

Groundwater and Environmental Protection (GWEP) TSG Membership and Offerings

2024 Members

Ameren Services Co.

Constellation Energy

Duke Energy

Entergy Services, Inc.

Korea Hydro & Nuclear Power (KHNP)

Pacific Gas & Electric

Palisades

PSEG Nuclear

Nebraska Public Power District (NPPD)

Southern Nuclear

STP Nuclear

Tennessee Valley Authority (TVA)

Vistra Corp

GWEP TSG Activities:

•Recorded Webcasts:

- Discuss Technical Topics
- Discuss EPRI Research Projects
- Utility Peer to Peer Discussions
- Stored on the [GW TSG Collaboration Site](#)

•R&D and Benchmarking

- Alpha for Groundwater Monitoring – Initial Investigation (2023, presented during TSG Webcast)
- Groundwater Assessment Observations (GWREP Hub) https://gwrep.epri.com/GWEP_TSG (2024)
- Radiological Environmental Protection Modernization Scoping Study (2023-2024)
- Knowledge Transfer Reference for Evaluating/Establishing New Discharge Points (2024-2025)
- Radiological Environmental Protection Research Gap Analysis (2024-2025)
- Overview of Groundwater Protection for Operations and Decommissioning Computer Based Training (2024-2025)

•Assessments

- Groundwater Assessments
- Off-site Dose Calculation Manual (ODCM) Assessments
- Radiological Environmental Monitoring Program (REMP) Assessments

Expanding Scope to Include Radiological Environmental Protection

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 - Databases
 - Software
 - Training Modules
 - Tools
 - Videos
- Events, Webcasts, and Collaboration Spaces
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For questions or website assistance, please contact EPRI
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800-313-3774, option 4.

Once you login, visit “My Dashboard”

The screenshot shows the EPRI website interface. At the top, there is a navigation bar with the EPRI logo and menu items: Research, Portfolio, Thought Leadership, Events, Training, Journal, About, and Careers. On the right side of the navigation bar, there is a search icon, a user profile icon for "Karen Kim-Stevens", and a notification icon. A dropdown menu is open under the user profile, showing options: "My Dashboard", "Update Profile", and "Logout".

The main content area features a large banner for the "New DCFlex Initiative: Data Center Flexibility to Help Strengthen Grid". The banner includes a large "DCFlex" logo and a "LEARN MORE" button. Below the banner, there are three smaller featured articles:

- EPRI, TVA Succeed in World's Largest Renewable Diesel Demo**: Accompanied by an image of an industrial facility.
- Find New Fall 2024 Supplemental Projects Here**: Accompanied by an image of a power plant and a worker.
- Lab Chronicles Webinar Series**: Accompanied by an image of a laboratory setting.

At the bottom right of the page, there is a blue chat icon.

Navigate to “Manage Favorite Programs”

The screenshot shows the EPRI My Dashboard interface. At the top, there is a navigation bar with the EPRI logo and menu items: Research, Portfolio, Thought Leadership, Events, Training, Journal, About, and Careers. A search bar and user profile (Karen Kim-Stevens) are on the right. Below the navigation bar is a blue header with a back arrow and the text "My Dashboard".

The main content area is divided into several sections:

- My Research Area Updates:** A blue box with a person icon and the text: "No Favorited Programs to display. Favorite a Program by starring the Program on either the Program Index or individual Program Pages to get started."
- My Upcoming Event:** A white box with a calendar icon. It lists "EPRI Americas Chemistry and Radiation Safety Workshop – March 2025" from March 03 - March 06 2025 at Duke Energy Plaza, Charlotte, North Carolina, USA. A "VIEW EVENT" button is at the bottom right.
- My Recent Event:** A dark grey box with a calendar icon. It lists "EPRI ED&CS - Advisory & Sector Council Meetings - Fall 2024" from September 15 - September 19 2024 at JW Marriott Los Angeles L.A. Live, Los Angeles, California, USA. It includes a "VIEW EVENT" button and a "ATTACHMENTS AVAILABLE" indicator.
- My Latest Training:** A white box with a graduation cap icon. It lists "2024 Nuclear Quality Assurance Refresher Training" (Self-Led Training) with a "Last Visit: November 25, 2024". A "VIEW MORE ON EPRI | U" button is at the bottom right.
- My Bookmarks:** A blue box with a bookmark icon.
- My Favorited Programs:** A section titled "My Favorited Programs" with a star icon and a "Manage Favorite Programs" link. It contains three purple boxes: "41.08.01 Advanced Nuclear Technology", "41.09.02 Remediation and Decommissioning Technology", and "41.09.04 Chemistry and Radiation Safety".
- Latest Articles from EPRI Journal:** A white box with a list of articles including "A Growing Partnership", "2024 EPRI Journal No. 4, Fall J", "EPRI#8217;s GET SET Initiative Gets Going", "Lessons From a Concrete Thermal Energy Storage (CTES) Demonstration Project", "How EPRI Laboratories Deliver Confidence to a Rapidly Changing Industry", "Take Home Tools", "Coming Together to Protect Water Supplies in an Energy Transformation", "Solar Module Recycling Progress Follows the Global Growth of PV", and "2024 EPRI Journal, No. 3 Summer".

You Can Select the Nuclear Programs of Interest

The screenshot shows the EPRI Program Index website. The navigation bar includes the EPRI logo, menu items (Research, Portfolio, Thought Leadership, Events, Training, Journal, About, Careers), a search icon, and a user profile for Karen Kim-Stevens. The main header is titled "Program Index" and includes a "TIP Subscription Settings" link, a "Weekly" update frequency selector, and an "All Updates" dropdown. Below the header, there is a "Search Programs" input field and a category filter menu with options: ALL PROGRAMS, GENERATION, NUCLEAR (selected), and ENERGY DELIVERY AND CUSTOMER SOLUTIONS. The NUCLEAR category shows 2 subscriptions and 3 favorites. A table lists 12 nuclear programs with columns for NUMBER, NAME, SUBSCRIBE (with an info icon), and FAVORITE (with a star icon). A chat icon is visible in the bottom right corner.

NUMBER	NAME	SUBSCRIBE	FAVORITE
41.01.01	International Materials Research (IMR)		
41.01.02	Pressurized Water Reactor Steam Generator Management Program (SGMP)		
41.01.03	Boiling Water Reactor Vessel and Internals Program (BWRVIP)		
41.01.04	Pressurized Water Reactor Materials Reliability Program (MRP)		
41.01.05	Welding and Repair Technology Center (WRTC)		
41.02.01	Fuel Reliability Program		
41.03.01	Used Fuel and High-Level Waste Management		
41.04.01	Nondestructive Evaluation Program		
41.05.04	Plant Reliability and Resilience		

Chemistry and Radiation Safety is Program 41.09.04

The screenshot shows a web browser displaying the EPRI Program Index. The page lists various programs with their IDs and names. The 'Chemistry and Radiation Safety' program (41.09.04) is highlighted with a blue star and a checkmark, indicating it is the selected program. Other programs include Pressurized Water Reactor Steam Generator Management Program (SGMP), Boiling Water Reactor Vessel and Internals Program (BWRVIP), Pressurized Water Reactor Materials Reliability Program (MRP), Welding and Repair Technology Center (WRTC), Fuel Reliability Program, Used Fuel and High-Level Waste Management, Nondestructive Evaluation Program, Plant Reliability and Resilience, Risk and Safety Management, Advanced Nuclear Technology, Remediation and Decommissioning Technology, NFIR Program, Nuclear Plant Modernization, Data-Driven Decision Making (3DM), Common Training Program, and Standardized Task Evaluation (STE).

Program ID	Program Name	Icon 1	Icon 2	Dropdown
41.01.02	Pressurized Water Reactor Steam Generator Management Program (SGMP)	✉	☆	
41.01.03	Boiling Water Reactor Vessel and Internals Program (BWRVIP)	✉	☆	
41.01.04	Pressurized Water Reactor Materials Reliability Program (MRP)	✉	☆	
41.01.05	Welding and Repair Technology Center (WRTC)	✉	☆	
41.02.01	Fuel Reliability Program	✉	☆	
41.03.01	Used Fuel and High-Level Waste Management	✉	☆	
41.04.01	Nondestructive Evaluation Program	✉	☆	
41.05.04	Plant Reliability and Resilience	✉	☆	
41.07.01	Risk and Safety Management	✉	☆	
41.08.01	Advanced Nuclear Technology	✉	★	
41.09.02	Remediation and Decommissioning Technology	✉	★	
41.09.04	Chemistry and Radiation Safety	✉	★	▼
41.12.01	NFIR Program	✉	☆	
41.13.01	Nuclear Plant Modernization	✉	☆	
41.13.02	Data-Driven Decision Making (3DM)	✉	☆	
41.20.01	Common Training Program	✉	☆	▼
41.20.02	Standardized Task Evaluation (STE)	✉	☆	

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The Chemistry and Radiation Safety Program Page

The screenshot shows a web browser displaying the EPRI website. The address bar shows the URL epri.com/research/programs/117956. The page title is "Program 41.09.04: Chemistry and Radiation Safety". The navigation menu includes "Research", "Portfolio", "Thought Leadership", "Events", "Training", "Journal", "About", and "Careers". The breadcrumb trail is "Program Home > Overview > Projects > Research Results > Events > Trainings > Contacts > Committees > Announcements > Links".

Overview

The Chemistry and Radiation Safety Program supports efforts to improve efficiency, asset management, regulatory compliance, minimization of dose to workers and the public, and environmental stewardship. Ultimately, effective chemistry control supports worker and public dose minimization, the key radiation safety objectives.

Chemistry conditions at nuclear power plants affect material corrosion rates, fuel performance, and plant radiation fields. Inadequate attention to chemistry can result in increased frequency of out-of-specification conditions that could lead to plant...

[READ MORE](#)

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Announcements

Lisa Edwards, Sr. Technical Executive |
Stephen Lopez, Principle Technical Lead,
Engineering | Christina Novogoratz,
Technical Leader I, Engineering
Posted: Jan 11, 2024

Dec 13, 2023, CHEM 2023-



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