

Note to requester: This is one of the two missing presentations requested in the first section of your 11/12/2020 letter.

# Technical Info Needed for Informed Harvesting Decisions

PRADEEP RAMUHALLI

Ex-Plant Materials Harvesting Workshop  
Rockville, MD



# Harvesting Experience – Summary

- ▶ Multiple projects spanning cancelled, disconnected, SAFSTOR, DECON, etc. plants
  - Zion, Zorita, Crystal River 3, Shoreham, River Bend 2, Ginna, ...
- ▶ Materials spanning RPV and piping (base metal and welds), cables, internals (baffle former bolts)
- ▶ General lessons learned
  - Uncertainty about operational environment for materials (especially for localized exposure)
  - Cost can be significant
  - Supporting resources may be scarce
  - Planning for harvesting must start significantly in advance of opportunity

Ultimately, harvesting decisions must balance knowledge gain vs costs (including dose to workers)

# General Needs for Informed Harvesting Decisions

- ▶ Why – Technical gaps
  - Identify the knowledge gaps that will be addressed by this specific harvesting opportunity
- ▶ How – R&D plan
  - Clearly articulate how the harvested material will be used to address knowledge gaps
  - Determine resources (including funds) for R&D on harvested material
- ▶ Who and When – Resource availability and planning for harvesting
  - Secure necessary engineering and labor support – need to justify and prioritize harvesting
  - Timelines and schedule development
  - Can be the greatest challenge in developing informed harvesting decisions
- ▶ What – Availability
- ▶ Post-harvesting planning – should cover everything from decon to shipping to receipt of material and handling for R&D purposes and waste disposal.

Much of this can be assembled prior to material becoming available, but may need to be modified to account for ground realities.

# Specifics Quantities That May Need to be Tracked as the Plan Comes Together

- ▶ Clear identification of appropriate material (e.g. labels and tags), and material documentation
  - Source, history, qualification information
  - Critical when harvesting is being coordinated with other activities (maintenance, decommissioning, etc.)
  
- ▶ Operational environment documentation
  - General parameters (temperature, radiation)
  - Proximity to other components
  - Physical contamination
  
- ▶ Material condition (degradation and aging) and special features
  - Cracking or other unique degradation conditions
  - Welds, terminations, base metal,...
  - Photographs of location and condition are invaluable!

Detailed knowledge capture about component condition can simplify planning when material becomes available for harvesting.



# Examples

Brand Rex	Instrument										
		XLPE (Ultral)/CSPE (Hypalon)									
			CR-3 BOM	Candidate Circuits	Location	Block Diag	Interconn. Diag	Categ. for Aband?	Aband. Status (Field Work)	Aband. DTO AR	Notes
			NK-35A	FWA-75	Turb Bld, CC	211-032 FW-I009		Yes			
			(1STP-16)	FWA-76	Turb Bld, CC	211-032 FW-I009		Yes			
				CIK32	Intermed	211-032 FW-I009					
			BK-25B	NIR117	Auxiliary						
			(1STP-20 T	NIR118	Auxiliary						
				NIR119	Auxiliary						
				NIR120	Auxiliary						
				NIR121	Auxiliary						
				NIR122	Auxiliary						
				NIR123	Auxiliary						
				NIR124	Auxiliary						
				NIR125	Auxiliary						
				NIR126	Auxiliary						
				NIR127	Auxiliary						
				NIR128	Auxiliary						
				NIR129	Auxiliary						
				NIR130	Auxiliary						
				NIR131	Auxiliary						
				NIR132	Auxiliary						

OAK RIDGE  
NATIONAL LABORATORY  
MANAGED BY UT-BATTELLE  
FOR THE DEPARTMENT OF ENERGY

ORNL/TM-2016/561

Light Water Reactor Sustainability Program:

## Zion Unit 1 Reactor Pressure Vessel Sample Acquisition: Phase 2 and Phase 3 Status Report

September 2016

Prepared by

T. M. Rosseel, M. A. Sokolov, X. Chen, and R. K. Nanstad  
Oak Ridge National Laboratory



UT-BATTELLE  
ORNL-27 (4-00)

## Light Water Reactor Sustainability Program

## Status Report and Research Plan for Cables Harvested from Crystal River Unit 3 Nuclear Generating Plant



September 2016

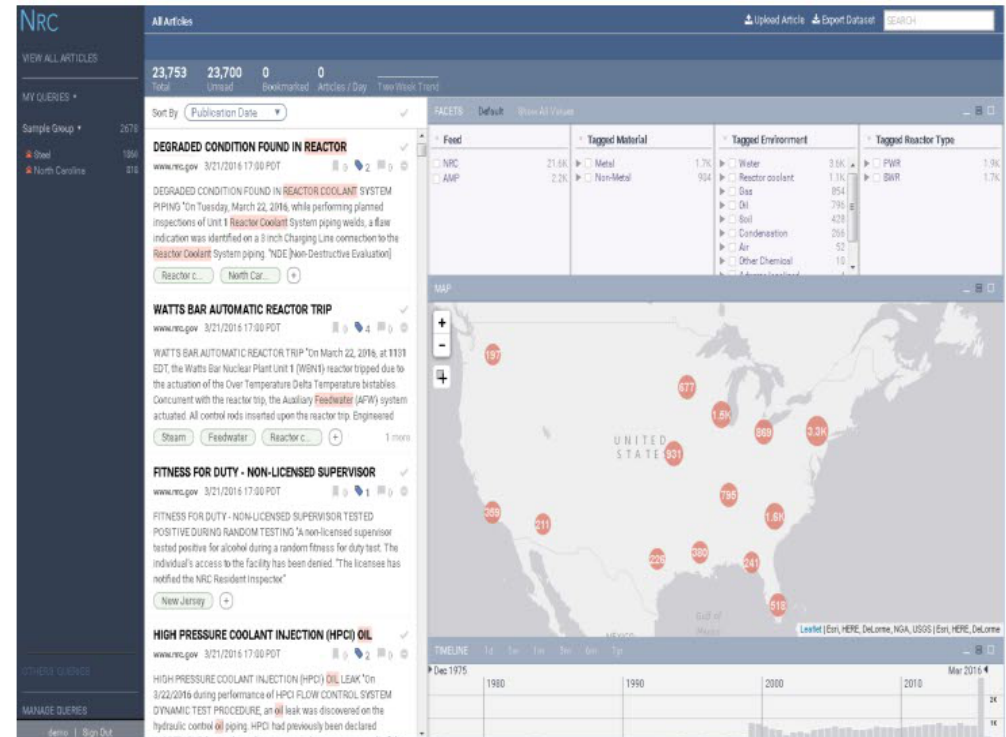
U.S. Department of Energy  
Office of Nuclear Energy

# Additional Recommended Information that would be helpful for planning, harvesting, and subsequent R&D

- ▶ Physical
  - Category, construction info, manufacturer, material composition, dimensions, special features
- ▶ Service Info
  - System, service application, how often used, safety/maintenance rule significance, age in service
  - Installation location, connected components, supporting structures or conveyances
- ▶ Stressors
  - Installation stressors, in-service environmental, other
- ▶ Operating experience
  - Testing history, failure or degradation

# Managing the Information Available, Documenting Information Needs, and the Harvesting Plan may Require Appropriate Information Tools

- ▶ Manage information from multiple sources to support informed harvesting decisions
- ▶ Data management tool providing a common ontology for managing information across multiple sources





Note to requester: This is the second of the two missing presentations requested in the first section of your 11/12/2020 letter.

# Data Needs Best Addressed By Harvesting – Overview

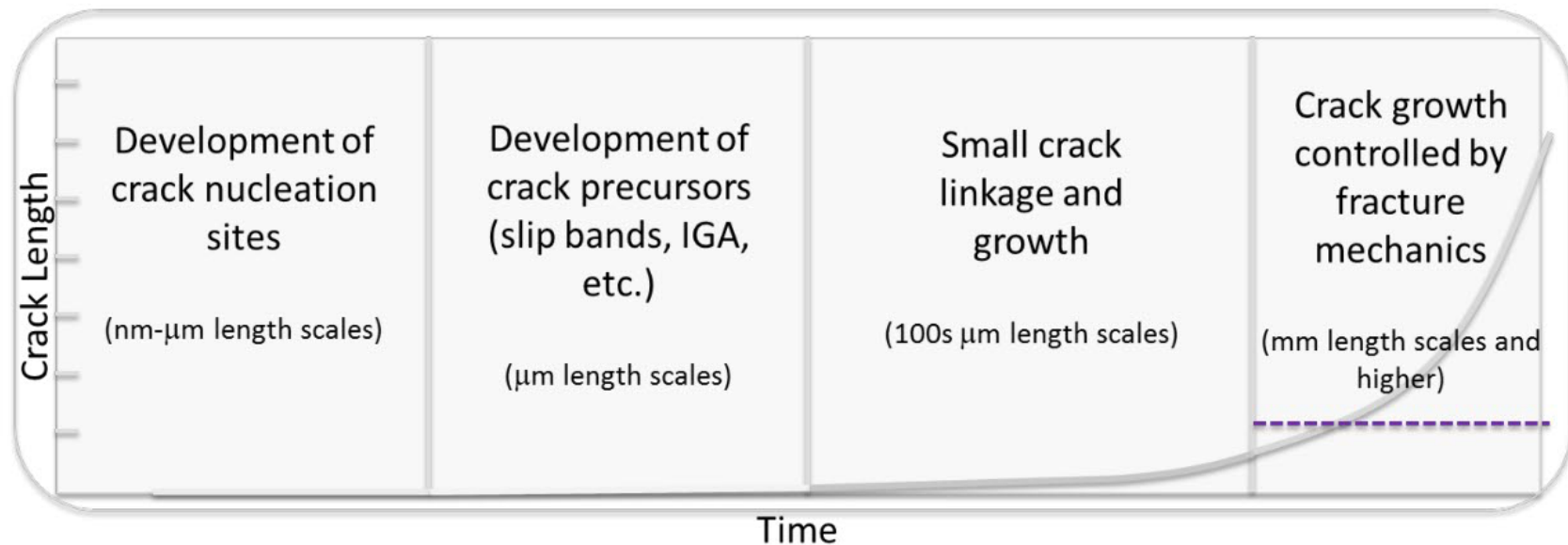
PRADEEP RAMUHALLI

Ex-Plant Materials Harvesting Workshop

Rockville, MD

# Several Sources of Literature are Available and Inform Data Needs

- ▶ EMDA/PMDA, GALL-SLR, Various NUREG/CR, DOE-LWRS, EPRI-LTO, IAEA-TECDOCs, Other DOE/EPRI publications...
- ▶ Key needs:
  - Understand materials processes that contribute to degradation growth
  - Availability of adequate NDE and condition monitoring techniques



The two key needs highlighted above are related, and will need to be jointly addressed for long-term operation needs

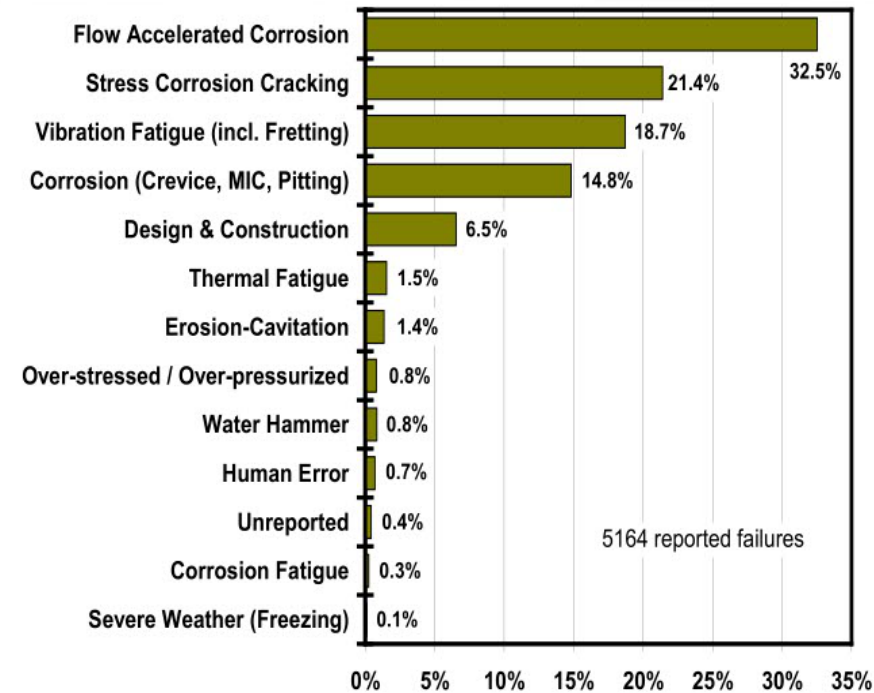
# Literature Covers a Broad Range of Materials and Mechanisms for Long-Term Operation

- ▶ Level of specificity varies
  - Specific compositions vs. generic alloys
  - Specific conditions vs. generic drivers of degradation
- ▶ Increased emphasis on non-metallic materials
- ▶ Identified knowledge gaps in materials degradation and condition monitoring

Key finding: Certain materials and mechanisms, within the context of long-term operation, may be considered a high priority for addressing technical gaps in degradation initiation, growth, and detection.

# Generic Data Needs for Material Aging Studies

- ▶ Dominant effects and synergistic effects
  - Thermal, coolant, and neutron
  - A need for multiple classes of materials
- ▶ Dose, dose-rate, spectrum effects
  - Microstructural variations
  - Irradiation-assisted processes
- ▶ Degradation initiation and growth studies
  - Particularly metals
  - Residual stress
- ▶ Mechanical properties
- ▶ Mitigation actions
  - Annealing, peening,...



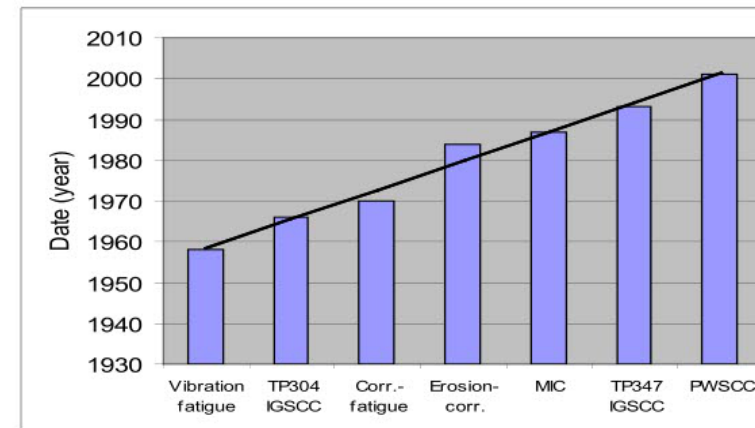
Lydell 2007 (US Pipe Failure Data by Degradation Mechanisms and Other Sources)

Key Insight: These data needs must be addressed for materials that exist in plants today



# Generic Data Needs for NDE and Condition Assessment

- ▶ Observables that result from aging of materials in real-world environments
  - Measurement targets for NDE and condition monitoring
  - Important for cables, concrete in particular
- ▶ Benchmarking of accelerated aging-produced degradation
  - Real-world degradation examples
  - Applicability of lab studies to quantify detectability
  - Detection and sizing limits under real-world conditions
- ▶ Field specimens – impact on detection and sizing



New degradation mechanisms in piping (Wilkowski 2002)

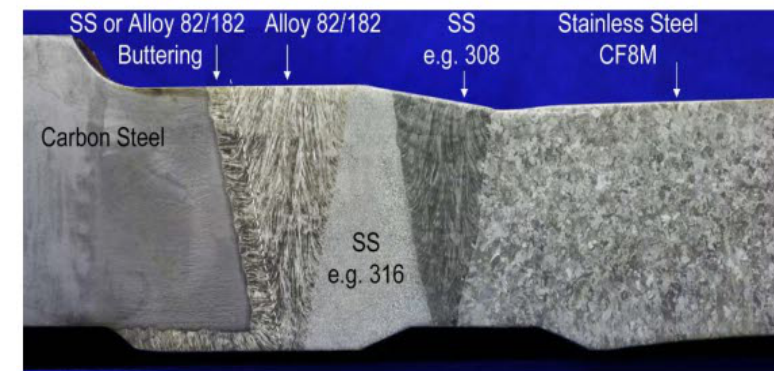
Key Insight: These data needs must be addressed for materials that exist in plants today.

# Where Can Harvesting Help?

- ▶ Benchmarking laboratory-scale studies on materials aging
- ▶ Identifying constraints on material/component replacement in operating plants.
  - Understanding aging mechanisms and precise margins to failure
- ▶ Determining specific methods for condition assessment that may be applied to assess component aging in the field.



<http://www.ne.doe.gov/LWRSP/overview.html>



Answer questions that help bridge the gap from the laboratory to the real-world.



# Criteria for Harvesting

- ▶ Unique field aspects, if any, that drive the importance of harvesting the material
  - Unusual OE – harvest to better understand phenomena
- ▶ Ease of laboratory replication of environment-material combination
- ▶ Applicability of harvested material for addressing critical gaps (for instance, dose rate issues)
- ▶ Availability of reliable ISI techniques for the material
- ▶ Availability of material for harvesting

Ultimately, harvesting decisions must balance knowledge gain vs. costs (including dose to workers).

# Examples – Electrical Cables

Criteria	Qualitative Assessment	Comments
Unique Field Aspects, if any	Vintage formulations, depending on manufacturer, real-world conditions.	10–12 manufacturers of vintage cable in U.S. fleet. Within a single plant, cable types and manufacturers can vary.
Ease of Laboratory Replication	Low-medium (long-term aging studies necessary)	
Applicability of Harvested Material for Addressing Critical Gaps	High - Wear-out aging a possibility. Evaluation of CM for field degradation.	Requires knowledge on plant conditions
Condition Monitoring/ISI for detection and sizing	Low to medium. Unclear how well proposed techniques would perform for low dose rate, low temperature aging of insulation.	Access limited; long-range methods are not fully understood
		effects apply and CSF L is formulation-specific.
GALL-SLR	Documented as a potential issue	AMP updates ongoing
OE?	Yes	Documented in industry publications
Level of Understanding of Mechanism (environmental factors, initiation and growth of degradation, related factors)	Medium	See knowledge gaps below
Options for Mitigation	Low	
Ease of Replacement	Medium	Possible but can get expensive depending on specific locations
Amount of Use (in a plant and fleet-wide)	High	LV and MV cables extensively used in plants
Critical Gaps in Knowledge	Contribution to data base for dominant effects, synergistic effects, dose rate effects for understanding accelerated aging vs. field aging, develop and qualify condition monitoring techniques	
HARVESTING PRIORITY		HIGH



# Examples - CASS

Criteria	Qualitative Assessment	Comments
Unique Field Aspects, if any	Vintage material, synergistic effects (especially radiation)	
Ease of Laboratory Replication	Low/medium	Gap relating accelerated aging studies to real-world service time
Applicability of Harvested	Calibrate and validate accelerated aging procedures;	Potential need to validate methods for simulating SCC.
Material Gaps	<b>Critical gaps</b> <ul style="list-style-type: none"> <li>Loss of fracture toughness due to thermal aging between 0.5 dpa and 5 dpa</li> <li>How radiation interacts with thermal aging</li> <li>Benchmarking accelerated aging studies</li> <li>ISI: Ensuring adequate coverage</li> </ul>	
Conditions detected		
Availability		
EMDA		
EMDA Knowledge, Confidence Score		
GALL-SLR	Variety of structures and similar components identified	No specifics on material composition
OE?	Limited	Mostly due to poor material quality or incorrect processing
Level of Understanding of Mechanism (environmental factors, initiation and growth of degradation, related factors)	Medium	See knowledge gaps.
Options for Mitigation	Low	
Ease of Replacement	Low	
Amount of Use (in a plant and fleet-wide)	High (Use of highest susceptibility CASS – CF8M – is lower)	Diversity in material composition and microstructure across plants. CF8M used in about 1/3 of PWRs that use CASS for Class 1 piping.
Critical Gaps in Knowledge	Synergistic effects of radiation and thermal embrittlement on fracture toughness, relation between accelerated tests and real-world service time, in-service material composition and microstructure	Multiple studies available using accelerated tests
HARVESTING PRIORITY	MEDIUM-HIGH	

# Examples - Internals

Criteria	Value	Comments
Unique Field Aspects, if any	High-fluence irradiation; vintage material	
Ease of Laboratory Replication	Low	Accelerated aging tests vs field aging service time
Applicability of Harvested Material for Addressing Critical Gaps	Mechanisms of irradiation-assisted degradation—microstructure and mechanical properties	Re-irradiation may assist with understanding materials performance at SLR fluences.
Condition Assessment/ISI	Available techniques (ultrasonic, visual) may be sufficient for reasonable assurance of detection. Sizing – maybe. Ease of ISI can be low depending on access.	Access issues may dictate POD and sizing performance. Challenging environment for continuous monitoring.
Availability of Material	Some materials being harvested; closed plants may provide additional opportunity	
EMDA Susceptibility Score	Generally high	Based on OE primarily.
EMDA Knowledge Score	Generally low	
GALL-SLR	Variety of structures and similar components identified, but no specifics on materials available	
OE?	Yes	Baffle bolt cracking, cracking in other internal components
Level of Understanding of Mechanism (environmental factors, initiation and growth of degradation, related factors)	Low-medium	See knowledge gaps
Options for Mitigation	Low	
Ease of Replacement	Depends on component	Some components (for instance, baffle bolts) can be replaced relatively easily.
Amount of Use (in a plant and fleet-wide)	High	
Critical Gaps in Knowledge	Degradation mechanisms (IASCC, swelling, segregation, etc.), flux rate and irradiation spectrum effects, microstructural property changes and links to mechanical properties	
HARVESTING PRIORITY	High	Unique field aspects and degradation mechanisms drive this prioritization.



# Examples - DMW

Criteria	Value	Comments
Unique Field Aspects, if any	Vintage material	
Ease of Laboratory Replication	Medium/high	See gap on relating accelerated aging studies to real-world service time
Applicability of Harvested Material for Addressing Critical Gaps	Calibrate and validate accelerated aging procedures, degradation initiation and growth studies, new/improved ISI procedures	Multiple studies available on SCC initiation and growth in nickel alloys and DMWs, mitigation proposals (overlay) also being studied.
Condition Assessment/ISI	Available techniques appear sufficient for reasonable assurance of detection in pressure boundary components (UT, EC) & internals (VT). Generally easy to apply ISI (assuming access).	Potential need to validate methods for simulating SCC. Access issues dictate POD and sizing performance. Detection and sizing generally capable of meeting acceptance criteria set in the Code
Availability of Material	TBD	Needs input from utilities
EMDA Susceptibility Score	Generally high	
EMDA Knowledge Score	Generally high	
SLR GD	Variety of structures and similar components identified, but no specifics on materials available	AMP XI. M7, M1, M2, M19: SG, Water Chem., ISI
OE?	Yes	
Level of Understanding of Mechanism (environmental factors, initiation and growth of degradation, related factors)	Medium-high	See knowledge gaps
Options for Mitigation	Low	
Ease of Replacement	Low	
Amount of Use (in a plant and fleet-wide)	High	
Critical Gaps in Knowledge	Crack growth rates, crack initiation time	Multiple studies available on SCC initiation and growth in nickel alloys and DMWs, mitigation proposals (overlay) also being studied.
HARVESTING PRIORITY	LOW	Multiple ongoing studies, significant advances in degradation understanding, availability of NDE drive priority assessment.

**From:** [Hiser, Matthew](#)  
**To:** [Reister, Richard](#)  
**Subject:** RE: RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop  
**Date:** Monday, February 27, 2017 12:05:00 PM

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That was my assumption – thank you for confirming!

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**From:** Reister, Richard [mailto:[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)]  
**Sent:** Monday, February 27, 2017 12:04 PM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop  
Yes, John plans to attend.  
Rich

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**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** Monday, February 27, 2017 12:01 PM  
**To:** Reister, Richard <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>  
**Subject:** RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop

Thanks Rich!

I just wanted to check, because I don't recall getting final confirmation. Is John Wagner going to attend the workshop? I think our last exchange was that you would be forwarding the invitation to him.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** Reister, Richard [<mailto:Richard.Reister@nuclear.energy.gov>]  
**Sent:** Monday, February 27, 2017 10:31 AM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; Bernhoft, Sherry <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; [john.wagner@inl.gov](mailto:john.wagner@inl.gov); Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop  
Matt:

For my session 1 talk, you can title it "DOE Perspectives on Material Harvesting." I do plan to use a few slides, still being developed. I will not participate in the dinner.

Rich

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**From:** Bernhoft, Sherry [<mailto:sbernhoft@epri.com>]  
**Sent:** Saturday, February 25, 2017 11:56 AM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Reister, Richard <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>;



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**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** RE: [External] RE: Ex-plant Materials Harvesting Workshop

Thanks Matt

For session 1 you can title my presentation as EPRI Perspective on Harvesting Projects – I do not plan to use overheads.

See you in a few weeks,

Sherry Bernhoft

**Electric Power Research Institute**

EPRI, Senior Program Manager

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**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]

**Sent:** Thursday, February 23, 2017 1:25 PM

**To:** Bernhoft, Sherry <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; Roussel Guy <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; [john.wagner@inl.gov](mailto:john.wagner@inl.gov)

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**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- Please let me know if you plan to join for the dinner with other workshop participants
- If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

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**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov' <[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building. The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. Please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.
2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, please email me a scanned copy of your passport if possible. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!



Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Hiser, Matthew](#)  
**To:** [Alpan, F. Arzu](#)  
**Subject:** RE: RE: Ex-plant Materials Harvesting Workshop  
**Date:** Monday, February 27, 2017 11:30:00 AM

---

Dear Arzu,

I am glad you can join for dinner.

Thank you for the heads-up. We'll keep the agenda as-is - don't feel the need to fill your whole time slot. I'm just glad we might have a little more time rather than being too short on time...

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Alpan, F. Arzu [mailto:[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)]

**Sent:** Monday, February 27, 2017 8:15 AM

**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>

**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop

Dear Matt,

I plan to join the dinner with the workshop participants.

Also, the agenda has 25 minutes for my Session 2 talk and 15 minutes for my Session 3 talk. I am estimating that my Session 2 talk will take 15 minutes and Session 3 talk will take 5 minutes.

Best regards,

Arzu

---

**From:** Hiser, Matthew [mailto:[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)]

**Sent:** Thursday, February 23, 2017 2:25 PM

**To:** Bernhoft, Sherry; Dyle, Robin; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)); Ahluwalia, Kawaljit; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)); 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; Alpan, F. Arzu; 'sokolovm@ornl.gov'; 'desire.ndomba@canada.ca'; 'khuynh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; Jackson, John Howard; Roussel Guy; [john.wagner@inl.gov](mailto:john.wagner@inl.gov)

**Cc:** Tregoning, Robert; Purtscher, Patrick

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- Please let me know if you plan to join for the dinner with other workshop participants
- If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gvannoordennen@energysolutions.com](mailto:gvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov' <[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

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I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. **Please let me know if you plan to join for the dinner with other workshop participants**, so I can make the appropriate reservation.
2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, **please email me a scanned copy of your passport if possible**. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Tregoning, Robert](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** FW: Harvesting Workshop  
**Date:** Monday, February 27, 2017 9:53:01 AM

---

Matt:

This is getting absurd. I guess we can't turn down an ACRS member. I'm going to send him an email telling him that you'll respond with the workshop information. Can you send him a general email with info and just let him know that the space is tight?

Thanks,

Rob

Robert Tregoning

Technical Advisor for Materials

US Nuclear Regulatory Commission

Two White Flint North, M/S T-10 A36

11545 Rockville Pike

Rockville, MD 20852-2738

ph: 301-415-2324

fax: 301-415-6671

---

**From:** Riccardella, Pete [mailto:Priccardella@Structint.com]

**Sent:** Monday, February 27, 2017 9:18 AM

**To:** Tregoning, Robert <Robert.Tregoning@nrc.gov>

**Subject:** [External\_Sender] Harvesting Workshop

Rob,

Could you please send me some info on this? As I recall from the EAF meeting, it's planned for March 7 & 8. I'm planning to come in a day early (Monday, March 6) for ACRS meetings so I can attend at least the first day of it.

Thanks,

*Pete Riccardella, PhD*

Member, USNRC Advisory Committee on Reactor Safeguards

**Structural Integrity Associates, Inc.**

*Experts in the prevention and control of structural and mechanical failures*

333 Adams St.

Denver, CO 80206

(b)(6) Cell:

(b)(6) Home:

**From:** [Tregoning, Robert](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** RE: Harvesting Workshop  
**Date:** Monday, February 27, 2017 1:32:37 PM

---

Matt:  
Thanks, I think this email is well put.....

Rob

Robert Tregoning  
Technical Advisor for Materials  
US Nuclear Regulatory Commission  
Two White Flint North, M/S T-10 A36  
11545 Rockville Pike  
Rockville, MD 20852-2738  
ph: 301-415-2324  
fax: 301-415-6671

---

**From:** Hiser, Matthew  
**Sent:** Monday, February 27, 2017 12:05 PM  
**To:** [Priccardella@Structint.com](mailto:Priccardella@Structint.com)  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>  
**Subject:** Harvesting Workshop

Dr. Ricardella:

Rob forwarded me your request for information on the harvesting workshop. I appreciate your interest in the topic of the workshop and am glad you are planning to attend. I have attached the agenda as well as slides developed to describe the purpose and objectives of the workshop. The workshop will start on Tuesday at 8 AM in 3WFN 1C3. For your awareness, we have limited space in the room and will also be offering remote participation online through a webinar for additional NRC staff and external participants unable to attend.

We are planning a dinner at a nearby restaurant for workshop participants. Please let me know if you would like to be included on the headcount for the reservation.

Please let me know if you have any questions or would like more information regarding the workshop.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer  
US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research  
Division of Engineering | Corrosion and Metallurgy Branch  
Phone: 301-415-2454 | Office: TWFN 10D62  
[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)  
**Subject:** [External\_Sender] パスワードのお知らせ  
**Date:** Tuesday, February 28, 2017 6:01:26 PM

---

以下のメールについて、暗号化した添付ファイルを  
復号するためのパスワードをお知らせします。

発信者 : kazunobu\_sakamoto@nsr.go.jp  
題名 : RE: Ex-plant Materials Harvesting Workshop  
日付 : Wed, 1 Mar 2017 08:00:16 +0900

復号パスワード

(b)(6)

Regarding the following message, a password for  
decoding is as follows.

Originator: kazunobu\_sakamoto@nsr.go.jp  
Subject: RE: Ex-plant Materials Harvesting Workshop  
Date: Wed, 1 Mar 2017 08:00:16 +0900

Password:

(b)(6)



**From:** [Tello, Daniel \(CNSC/CCSN\)](#)  
**To:** [Hiser, Matthew](#)  
**Cc:** [Karen Huynh \(khuyinh@aecl.ca\)](#); [Ndomba, Désiré \(CNSC/CCSN\)](#)  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Tuesday, February 28, 2017 5:04:09 PM  
**Attachments:** [Presentation to US NRC Harvesting Workshop - March 6 to 8 2017.pdf](#)

Note to requester: Attachment is immediately following.

Hi Matt,

Attached is our presentation for the workshop next week.

Let me know if you have any questions or require anything further.

Regards,

Dan

**Daniel Tello**

**Senior Research Program Officer**

**Regulatory Research and Evaluation Division**

**Canadian Nuclear Safety Commission / Government of Canada**

**[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca) / Tel: 613-995-2609**

**Agent principal du programme de recherche**

**Division de la recherche en réglementation et de l'évaluation**

**Commission canadienne de sûreté nucléaire / Gouvernement du Canada**

**[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca) / Tél: 613-995-2609**

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Sent:** February-23-17 9:07 AM

**To:** Bernhoft, Sherry (sbernhof@epri.com); Dyle, Robin; Jean Smith (jmsmith@epri.com); Ahluwalia, Kawaljit; Richard Reister (Richard.Reister@nuclear.energy.gov); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov); Tello, Daniel (CNSC/CCSN); 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; Jackson, John Howard; Ndomba, Désiré (CNSC/CCSN)

**Cc:** Tregoning, Robert; Purtscher, Patrick

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>)  
by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen'

<[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov))  
<[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>;  
'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be'  
<[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>;  
'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, **please provide me with a presentation title.**
2. Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>)  
by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)



Government  
of Canada

Gouvernement  
du Canada

Canada

# ***Evaluating Structures, Systems & Components from Decommissioned/Decommissioning Nuclear Facilities in Canada***

Presented at the Nuclear Regulatory Commission Harvesting Workshop - March 7-8, 2017

Daniel Tello – CNSC Senior Research Officer

Désiré Ndomba – CNSC Technical Specialist

Karen Huynh – AECL Federal S&T Manager

e-Docs #5196600



**CANADA 150**



# Outline

- Who we are

- Canadian Nuclear Safety Commission (CNSC)



- Atomic Energy of Canada Limited (AECL)



- Canadian Harvesting Projects & Sources

- Nuclear Power Plants and Research Reactors

- ✓ Nuclear Power Demonstration (NPD) Generating Station

- ✓ Gentilly-2 Nuclear Generating Station

- ✓ Nuclear Research Universal (NRU) Reactor

- Summary

# Canadian Nuclear Safety Commission

## Canada's nuclear regulator for over 70 years



- Canadian Nuclear Safety Commission (CNSC):
  - Established on May 2000 under the Nuclear Safety Control Act (NSCA);
  - Replaced the Atomic Energy Control Board, which was established in 1946 under the Atomic Energy Control Act;
- CNSC's Mission:
  - Regulate the use of nuclear energy and materials to protect the **health, safety and security** of Canadians and the **environment**;
  - Implement Canada's **international commitments** on the peaceful use of nuclear energy;
  - Disseminate **objective scientific, technical and regulatory information** to the public;



- AECL is a federal Crown corporation responsible for managing Canada's radioactive waste liabilities and enabling nuclear science and technology
- AECL delivers their mandate through a contractual arrangement with Canadian National Energy Alliance (CNEA) for the management and operation of Canadian Nuclear Laboratories (CNL) under a Government-owned, Contractor-operated (GoCo) model
- AECL oversees the delivery of the Federal Nuclear Science and Technology Work Plan in order to support the Government's priorities and core responsibilities in areas such as nuclear safety, security, energy, health and the environment
- CNL is responsible for the management and operation of the Laboratories, and is the licensee with access rights to AECL's assets and Intellectual Property (IP)



# *Harvesting Materials in Canada*



## Why is Harvesting Important?

- The nuclear power plants (NPPs) that are currently in operation were generally designed and built with conservative principles, and in many cases have significant remaining safety margins. Typically, NPPs were designed with the intent of operating for up to 30 years. This is now changing to approximately 60 years.
- Harvesting materials from decommissioned or decommissioning facilities is intended to assess the remaining safety margins for the physical condition of structures, systems and components (SSCs) in NPPs through testing to verify and/or validate the technical feasibility of Long Term Operation (LTO).

## Canadian Harvesting Projects

- Canada currently has harvesting projects in 2 areas from different facilities
  - Analysis of Degradation Mechanisms of Cables
  - Understanding Degradation of Concrete

# *Nuclear Power Demonstration Plant (NPD)*

- The 20 MW Nuclear Power Demonstration Plant (NPD) was Canada's first nuclear power reactor to supply electricity to Ontario Hydro's electrical distribution grid
- The reactor permanently shutdown in 1988 after 25 years of service
  - CNSC sponsored a research project with Ontario Hydro in 1991 on: "Cable insulation degradation of the 20 MW Nuclear Power Demonstration Plant"
  - AECL currently has a research project to analyze concrete samples from NPD



# *Understanding the Degradation of Concrete*

## Background

- This project will address gaps in the domestic knowledge of concrete degradation in nuclear power plants and will support regulatory decisions for long-term reactor operations of domestic utilities and new reactor technologies, such as SMRs.

## Project Objective

- To assess concrete core samples for degradation

## Status

- Year one of a three year project
- Received 7 concrete cores from Nuclear Power Demonstration (NPD) reactor
- Identified test techniques to assess for degradation

## Other opportunities

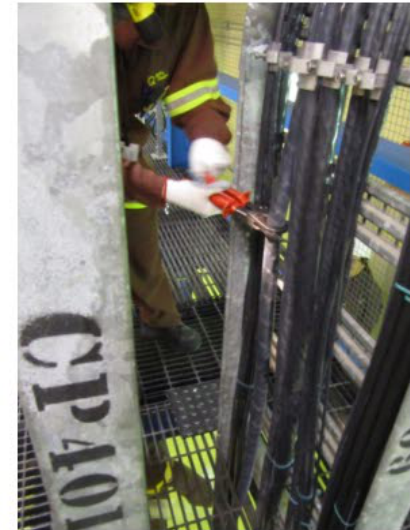
- Concrete from other decommissioned reactors in Canada such as Gentilly-2, Douglas Point and AECL's whiteshell reactor in Pinawa, Manitoba





# *Gentilly-2 Nuclear Power Plant*

- Gentilly-2 (G2) Nuclear Power Plant (NPP) is a CANDU-6 675 Mwe nuclear reactor which was permanently shutdown in 2012 after 29 years of service
  - CNSC & AECL/CNL are currently conducting a research project on the Analysis of Degradation Mechanisms of Cable Insulation due to Ageing in a Decommissioned Nuclear Power Plant



# *Cable Harvesting Project from G2*

## Background

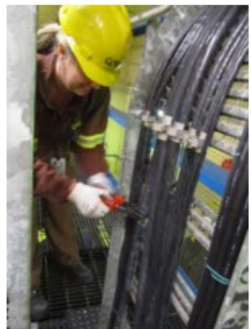
- Material properties of cables aged in real time and real operating conditions can be significantly different from the properties received by studying samples aged in laboratory and assumed in codes and standards.

## Project Objective

- Assess current cable degradation resulting from thermal and radiation ageing
- Validate environmental qualification work

## Status

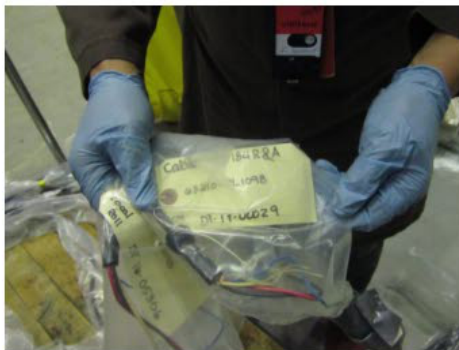
- Reviewed environmental conditions and selected cables to be harvested from Hydro Quebec/Gentilly-2 reactor
- CNSC & AECL/CNL staff have recently witnessed the removal of cable samples from the G-2 NPP
- Samples will be retrieved and tested to improve cable ageing test parameters used to assess cable condition



# Cable Harvesting Project from G2 (cont'd)

## Challenges

- There were several challenges associated with the cable harvesting project at G2:
  - removal of material samples from a decommissioned NPP is neither a compliance nor licensing activity for licensees;
  - accessibility of analysis and testing records (data, samples, etc.)
  - inaccessibility or contamination of materials to be removed
  - cost related to carry out research activity on these materials.





# National Research Universal (NRU) Reactor

- NRU is a 135MWt nuclear research reactor built in the Chalk River Laboratories, Ontario with first criticality achieved on November 3, 1957.
- The NRU reactor has three purposes
  - Supplier of industrial and medical radioisotopes used for the diagnosis and treatment of life-threatening diseases;
  - A major Canadian facility for neutron physics research; and
  - Research and development support for CANDU® power reactors.
- After 5 decades of service, the NRU reactor will shut down permanently in March 2018, after ~270k hours operation.
- The NRU reactor contains a vast array of materials and components including
  - structural materials (such as steels and other nickel bearing alloys, zirconium alloys, aluminum, concrete) and welded joints
  - a thermal graphite column
  - equipment (including pumps)
  - graphite seals
  - electrical cables
  - thermocouples



304 SS, ~1.6 dpa, 35 °C,  
~ $3.4 \times 10^{26}$  n/m<sup>2</sup> (E<0.625 eV)

# *Harvest Material from National Research Universal (NRU) Reactor*

## Project Objective

- Create an inventory of irradiated materials which can be harvested from the decommissioned NRU reactor
- The inventory will be used to assess irradiation damage on the performance of in-core materials and components

## Advantages of Harvesting Materials from NRU

- Assess the effects of irradiation on the performance and degradation of a variety of materials;
  - wide range of temperature, flux and neutron spectrum
  - irradiation times on the order of power reactor lifetimes
  - the combination of operating conditions and exposure is not always easily or economically obtainable in test programs
- Collaborate with various partners throughout the international nuclear industry who also wish to characterize the effects of irradiation on materials
- Provide information to decommissioning groups interested in the radionuclide inventory of the decommissioned reactor.

## Status

- One year project that will start on April 1, 2017

# Summary

- Understanding ageing degradation is an important aspect to ensure nuclear safety as nuclear power plants age
- R&D behind SSC material life management is needed to ensure the safe and reliable operation of NPPs
- Several nuclear facilities in Canada exist for potential harvesting of Structures, Systems & Components. Examples include:
  - Nuclear Power Demonstration (NPD) Facility
  - Gentilly-2 (G2)
  - National Research Universal Reactor (NRU)
  - Douglas Point
  - AECL's Whiteshell Reactor





# Contacts



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Canadian Nuclear Laboratories | Laboratoires Nucléaires Canadiens

Lori Walters  
Sr Mechanical R&D  
Email: [lori.walters@cnl.ca](mailto:lori.walters@cnl.ca)

# *Questions*



*Thank you!*

**From:** [Hiser, Matthew](#)  
**To:** [Ndomba, Désiré \(CNSC/CCSN\)](#)  
**Subject:** RE: RE: Ex-plant Materials Harvesting Workshop  
**Date:** Tuesday, February 28, 2017 1:16:00 PM

---

Thank you Désiré!

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Ndomba, Désiré (CNSC/CCSN) [<mailto:desire.ndomba@canada.ca>]

**Sent:** Tuesday, February 28, 2017 1:14 PM

**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop

Good afternoon Mr. Matthew Hiser,

Please note that the attached document contains copy of my passport as requested below.

Thanks!

Désiré

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]

**Sent:** February-23-17 2:25 PM

**To:** Bernhoft, Sherry; Dyle, Robin; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)); Ahluwalia, Kawaljit; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)); Tello, Daniel (CNSC/CCSN); 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; 'sokolovm@ornl.gov'; Ndomba, Désiré (CNSC/CCSN); 'khuyinh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; Jackson, John Howard; Roussel Guy; [john.wagner@inl.gov](mailto:john.wagner@inl.gov)

**Cc:** Tregoning, Robert; Purtscher, Patrick

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- Please let me know if you plan to join for the dinner with other workshop participants
- If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp'



<[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>;  
'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca'  
<[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuyinh@aecl.ca' <[khuyinh@aecl.ca](mailto:khuyinh@aecl.ca)>; 'higuchi@criepi.denken.or.jp'  
<[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>;  
'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov'  
<[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building. The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building. I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. **Please let me know if you plan to join for the dinner with other workshop participants**, so I can make the appropriate reservation.
2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, **please email me a scanned copy of your passport if possible**. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Hiser, Matthew](#)  
**To:** [William F Zipp \(Generation - 4\)](#)  
**Subject:** RE: RE: RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Tuesday, February 28, 2017 3:59:00 PM

---

Hi Bill,

No worries – I know what you meant ☺ None of us have very creative presentation titles, I can assure you!

I appreciate you coordinating your slides with Gerry. I think it would definitely be good to avoid repetition if possible.

For the concrete piece, we'll have a staff from NRC (Mita Sircar) that is involved with radiation effects on concrete at the workshop. I'm sure she would be interested in that topic...

Also, will you be joining the dinner on Tuesday night?

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** William F Zipp (Generation - 4) [<mailto:william.f.zipp@dom.com>]

**Sent:** Tuesday, February 28, 2017 3:42 PM

**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Subject:** [External\_Sender] RE: RE: Ex-plant Materials Harvesting Workshop Presentations

Matt - I meant to say the title of my presentation is not very original. I reread this email and thought – hmmm, this could be interpreted in a couple of ways. I better clarify!

Bill

---

**From:** William F Zipp (Generation - 4)

**Sent:** Tuesday, February 28, 2017 2:38 PM

**To:** 'Hiser, Matthew'

**Subject:** RE: RE: Ex-plant Materials Harvesting Workshop Presentations

Not very original.....

Anyway I do have slides drafted. I emailed them to Gerry Van Noordennen when I realized he's also attending, to see if he has any comments. We also want to try to avoid repeating each other in our presentations. With all the technical discussion I'm expecting, I will be the outlier, as my discussion has nothing to do with that. It's also a little strange because Kewaunee is the one plant that hasn't been involved in material harvesting. Nonetheless I think the industry thoughts are probably pretty comment on the logistics involved.

Our Dominion lead for license renewal for Surry (is Surry the lead plant for SLR?), Paul Aitken, told me that EPRI modeled the effects of neutron embrittlement based on the drawings and fluence information from Kewaunee. Assuming that's true, I would think harvesting concrete located next to the beltline region in the reactor vessel support structure at Kewaunee to validate the modeling might be of interest. I would have no idea who to talk to about this....other than you!

Thanks,

Bill

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]



**Sent:** Tuesday, February 28, 2017 2:29 PM  
**To:** William F Zipp (Generation - 4)  
**Subject:** [External] RE: RE: Ex-plant Materials Harvesting Workshop Presentations  
Thanks Bill!

---

**From:** William F Zipp (Generation - 4) [<mailto:william.f.zipp@dom.com>]  
**Sent:** Tuesday, February 28, 2017 3:25 PM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop Presentations  
Matt – you can title my presentation: Kewaunee insights on material harvesting.  
Bill

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** Thursday, February 23, 2017 8:09 AM  
**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)); Dyle, Robin; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)); Ahluwalia, Kawaljit; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; William F Zipp (Generation - 4); 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)); 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; Jackson, John Howard; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)  
**Cc:** Tregoning, Robert; Purtscher, Patrick  
**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZ70JOS055QUU?usp=sharing>)  
by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew  
**Sent:** Wednesday, February 15, 2017 10:47 AM  
**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>  
**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These



slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, **please provide me with a presentation title.**
2. **Please send me your slides** (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

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**From:** [Hiser, Matthew](#)  
**To:** [Ahluwalia, Kawaljit](#)  
**Cc:** [Smith, Jean](#); [Bernhoft, Sherry](#)  
**Subject:** RE: RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Tuesday, February 28, 2017 3:29:00 PM

---

Thanks Al, just let me know...

---

**From:** Ahluwalia, Kawaljit [mailto:kahluwal@epri.com]  
**Sent:** Tuesday, February 28, 2017 3:21 PM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Cc:** Smith, Jean <jmsmith@epri.com>; Bernhoft, Sherry <sbernhoft@epri.com>  
**Subject:** [External\_Sender] RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Hi Matt,

I was unaware of Heather providing input. I will contact her. That may mean more time.

Al

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Tuesday, February 28, 2017 1:10 PM  
**To:** Ahluwalia, Kawaljit <kahluwal@epri.com>  
**Cc:** Smith, Jean <jmsmith@epri.com>; Bernhoft, Sherry <sbernhoft@epri.com>  
**Subject:** RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Hi Al,

I certainly can give you some more time. The other thing I was going to mention was that the PWROG (POC Heather Malikowski) was planning to provide input to EPRI's session 3 presentation. Have you been in touch with them or have they provided input?

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Ahluwalia, Kawaljit [mailto:kahluwal@epri.com]  
**Sent:** Tuesday, February 28, 2017 12:48 PM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Cc:** Smith, Jean <jmsmith@epri.com>; Bernhoft, Sherry <sbernhoft@epri.com>  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Matt,

I received an email from Ringhals and they also want me to present their plant retirement and material harvesting plans. Can you give me another 10-15 minutes on the agenda?

Al

---

**From:** Ahluwalia, Kawaljit  
**Sent:** Tuesday, February 28, 2017 10:18 AM  
**To:** 'Hiser, Matthew' <Matthew.Hiser@nrc.gov>  
**Cc:** Smith, Jean <jmsmith@epri.com>; Bernhoft, Sherry <sbernhoft@epri.com>  
**Subject:** RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations



Matt,

I will presenting on plans by Korea Hydro and Nuclear Co. (KHNP) for Kori-1 retirement and their research interests. The title of the presentation is "Kori-1 Harvesting Plan for Materials Aging Degradation Research". I will send you the slides by March 3<sup>rd</sup>.

Al

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]

**Sent:** Thursday, February 23, 2017 9:07 AM

**To:** Bernhoft, Sherry <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>)  
by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:



If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, please provide me with a presentation title.
2. Please send me your slides (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

\*\*\* This email message is for the sole use of the intended recipient(s) and may contain information that is confidential, privileged or exempt from disclosure under applicable law. Unless otherwise expressed in this message by the sender or except as may be allowed by separate written agreement between EPRI and recipient or recipient's employer, any review, use, distribution or disclosure by others of this message is prohibited and this message is not intended to be an electronic signature, instrument or anything that may form a legally binding agreement with EPRI. If you are not the intended recipient, please contact the sender by reply email and permanently delete all copies of this message. Please be advised that the message and its contents may be disclosed, accessed and reviewed by the sender's email system administrator and/or provider. \*\*\*

**From:** [Jendrich, Uwe Dr.](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] AW: Ex-plant Materials Harvesting Workshop  
**Date:** Tuesday, February 28, 2017 11:46:06 AM  
**Attachments:** [Harvesting Workshop Draft Agenda+GRS.docx](#)

---

Dear Matt,

please find enclosed your workshop draft agenda with the proposed titles of my presentation included.

I hope they will fit in.

Kind regards

Uwe

Note to requester: Attachment is immediately following.
---

---

**Von:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Gesendet:** Donnerstag, 23. Februar 2017 20:25

**An:** Bernhoft, Sherry; Dyle, Robin; Jean Smith (jmsmith@epri.com); Ahluwalia, Kawaljit; Richard Reister (Richard.Reister@nuclear.energy.gov); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov); 'daniel.tello@canada.ca'; Jendrich, Uwe Dr.; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; 'sokolovm@ornl.gov'; 'desire.ndomba@canada.ca'; 'khuynh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; Jackson, John Howard; Roussel Guy; john.wagner@inl.gov

**Cc:** Tregoning, Robert; Purtscher, Patrick

**Betreff:** RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- Please let me know if you plan to join for the dinner with other workshop participants
- If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov' <[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building.

The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. **Please let me know if you plan to join for the dinner with other workshop participants**, so I can make the appropriate reservation.
2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, **please email me a scanned copy of your passport if possible**.

This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)



# Ex-Plant Materials Harvesting Workshop Draft Agenda

Tuesday, March 7

Session	Time	Organization	Speaker	Presentation Title
Intro	8:00	NRC		Welcome and Introduction to Workshop
1	8:15 – 8:45	EPRI	Sherry Bernhoft	
		DOE	Rich Reister	
		NRC	Robert Tregoning	NRC Perspective on Motivation for Harvesting
		GRS	Uwe Jendrich	Role of GRS in Decommissioning and LTO
		CRIEPI	Taku Arai	
	8:45 – 9:45	DISCUSSION		
9:45-10:00		BREAK		
2	10:00 – 10:20	PNNL (for NRC)	Pradeep Ramuhalli	Data Needs Best Addressed By Harvesting
	10:20 – 10:30	NRC	Matthew Hiser	High-Priority Data Needs for Harvesting
	10:30 – 10:55	DOE	Keith Leonard	LWRS Program Perspective on the Technical Needs for Harvesting
	10:55 – 11:20	SCK-CEN	Rachid Chaouadi	Review of past RPV sampling test programs and perspective for long term operation
	11:20 – 11:45	Westinghouse	Arzu Alpan	Importance of Harvesting to Evaluate Radiation Effects on Concrete Properties
	11:45 – 12:30	DISCUSSION		
12:30 – 2:00		LUNCH		
3	2:00 – 2:15	NRC	Matthew Hiser	Sources of Materials: Past NRC Harvesting and U.S. Decommissioning Plants
	2:15 – 2:30	EPRI	Al Ahluwalia	
	2:30 – 2:45	DOE/ORNL	Tom Rosseel	
	2:45 – 3:00	DOE/INL	John Jackson	NSUF Material Sample Library
	3:00 – 3:15	Energy Solutions	Gerry van Noordennen	
	3:15 – 3:30	Westinghouse	Arzu Alpan	Potential Harvesting of Concrete from Mihama Unit 1
	3:30 – 3:45	BREAK		
	3:45 – 4:00	GRS	Uwe Jendrich	Plants in Decommissioning in Germany
	4:00 – 4:15	CNSC	Daniel Tello	
	4:15 – 5:00	DISCUSSION		

Wednesday, March 8

Session	Time	Organization	Speaker	Presentation Title
4	8:00 – 8:30	EPRI	Jean Smith	
	8:30 – 9:00	DOE	Tom Rosseel	
	9:00 – 9:30	NRC	Matthew Hiser	NRC Perspective on Harvesting Experience and Lessons Learned
	9:30 – 10:00	CRIEPI	Taku Arai	
	10:00 – 10:15	BREAK		
	10:15 - 10:45	Energy Solutions	Gerry van Noordennen	
	10:45 - 11:15	Dominion	Bill Zipp	
	11:15 – 12:00	DISCUSSION		
12:00 – 1:30		LUNCH		
5	1:30 – 1:45	PNNL (for NRC)	Pradeep Ramuhalli	Technical Information Needed for Informed Harvesting Decisions
	1:45 – 2:30	DISCUSSION		
	2:30 – 3:00	Action Items and Next Steps		
	3:00 – 4:00	EPRI	Sherry Bernhoft	Closing Thoughts
		DOE	Rich Reister	
		NRC	Robert Tregoning	
		ALL		

**From:** [Hiser, Matthew](#)  
**To:** [Jendrich, Uwe Dr.](#)  
**Subject:** RE: AW: Ex-plant Materials Harvesting Workshop  
**Date:** Tuesday, February 28, 2017 1:45:00 PM

---

Dear Uwe,  
Thank you for the titles. I think they fit well in each session.  
I am looking forward to meeting you at the workshop next week!  
Thanks!  
Matt

---

**From:** Jendrich, Uwe Dr. [mailto:Uwe.Jendrich@grs.de]  
**Sent:** Tuesday, February 28, 2017 11:46 AM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] AW: Ex-plant Materials Harvesting Workshop

Dear Matt,  
please find enclosed your workshop draft agenda with the proposed titles of my presentation included.  
I hope they will fit in.  
Kind regards  
Uwe

---

**Von:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Gesendet:** Donnerstag, 23. Februar 2017 20:25  
**An:** Bernhoft, Sherry; Dyle, Robin; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)); Ahluwalia, Kawaljit; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)); 'daniel.tello@canada.ca'; Jendrich, Uwe Dr.; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; 'sokolovm@ornl.gov'; 'desire.ndomba@canada.ca'; 'khuynh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; Jackson, John Howard; Roussel Guy; [john.wagner@inl.gov](mailto:john.wagner@inl.gov)  
**Cc:** Tregoning, Robert; Purtscher, Patrick  
**Betreff:** RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- Please let me know if you plan to join for the dinner with other workshop participants
- If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!  
Matt

---

**From:** Hiser, Matthew  
**Sent:** Wednesday, February 15, 2017 10:47 AM  
**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>;



'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov' <[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

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Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Hiser, Matthew](#)  
**To:** [Wagner, John C](#)  
**Cc:** [Connie V Bates](#)  
**Subject:** RE: Re: Ex-plant Materials Harvesting Workshop  
**Date:** Tuesday, February 28, 2017 7:09:00 AM

---

I've got you included, John.

Thanks!

Matt

**From:** Wagner, John C [mailto:[john.wagner@inl.gov](mailto:john.wagner@inl.gov)]

**Sent:** Monday, February 27, 2017 7:32 PM

**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Cc:** Connie V Bates <[connie.bates@inl.gov](mailto:connie.bates@inl.gov)>

**Subject:** [External\_Sender] Re: Ex-plant Materials Harvesting Workshop

Matthew,

If it's not too late, please include me in the group for dinner. Thanks!

John C. Wagner, PhD

Director, Light Water Reactor Sustainability Program Technical Integration Office

Director, Domestic Programs

Nuclear Science and Technology Directorate

Idaho National Laboratory

(b)(6) (cell) (b)(6)

On Thu, Feb 23, 2017 at 12:24 PM, Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)> wrote:

Dear workshop attendees:

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Thanks!

Matt

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**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpyvannoordennen@energysolutions.com](mailto:gpyvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuyinh@aecl.ca' <[khuyinh@aecl.ca](mailto:khuyinh@aecl.ca)>;



'[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>;  
'[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>;  
'[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; '[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)'  
<[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick  
<[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building.

The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. **Please let me know if you plan to join for the dinner with other workshop participants**, so I can make the appropriate reservation.

2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, **please email me a scanned copy of your passport if possible**. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)



Note to requester: The attachment is withheld in full under FOIA Exemption B6.

**From:** 坂本 一信  
**To:** [Hiser, Matthew](#)  
**Cc:** [Tregoning, Robert](#)  
**Subject:** [External\_Sender] [WARNING: MESSAGE ENCRYPTED]RE: Ex-plant Materials Harvesting Workshop  
**Date:** Tuesday, February 28, 2017 6:01:38 PM  
**Attachments:** [Passport sakamoto.jpg.zip](#)

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Dear Matt,  
Sorry for my late response since I had been out of office for 3 weeks.  
Please find attached copy of passport.  
As for the dinner on Tuesday, I am soory  (b)(6)  
Best regards,  
Kazu

---

差出人: Hiser, Matthew [Matthew.Hiser@nrc.gov]  
送信日時: 2017年2月28日 3:28  
宛先: 坂本 一信  
件名: RE: Ex-plant Materials Harvesting Workshop

Hi Kazu,  
I hope all is well with you! I wanted to check on your passport copy and whether you can send it to me in advance of the meeting. If so, please send as soon as possible.  
Thanks!  
Matt

**Matthew Hiser**

Materials Engineer  
US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research  
Division of Engineering | Corrosion and Metallurgy Branch  
Phone: 301-415-2454 | Office: TWFN 10D62  
[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew  
**Sent:** Thursday, February 23, 2017 2:25 PM  
**To:** Bernhoft, Sherry (sbernhof@epri.com) <sbernhof@epri.com>; 'Dyle, Robin' <rdyle@epri.com>; 'Jean Smith (jmsmith@epri.com)' <jmsmith@epri.com>; 'Ahluwalia, Kawaljit' <kahluwal@epri.com>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <Richard.Reister@nuclear.energy.gov>; 'leonardk@ornl.gov' <leonardk@ornl.gov>; 'Rosseel, Thomas M.' <rosseeltm@ornl.gov>; 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P. Van Noordennen' <gpvannoordennen@energysolutions.com>; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <Pradeep.Ramuhalli@pnnl.gov>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca>; 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>; 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>; 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>; 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; 'sokolovm@ornl.gov' <sokolovm@ornl.gov>; 'desire.ndomba@canada.ca' <desire.ndomba@canada.ca>; 'khuynh@aecl.ca' <khuynh@aecl.ca>; 'higuchi@criepi.denken.or.jp' <higuchi@criepi.denken.or.jp>; 'kazunobu\_sakamoto@nsr.go.jp' <kazunobu\_sakamoto@nsr.go.jp>; 'chimi.yasuhiro@jaea.go.jp' <chimi.yasuhiro@jaea.go.jp>; Jackson, John Howard <john.jackson@inl.gov>; 'Roussel Guy' <guy.roussel@Belv.be>; 'John.wagner@inl.gov' <john.wagner@inl.gov>  
**Cc:** Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>  
**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- ✎ Please let me know if you plan to join for the dinner with other workshop participants
- ✎ If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov' <[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

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2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, please email me a scanned copy of your passport if possible. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and

engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

*Phone: 301-415-2454 | Office: TWFN 10D62*

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)





**From:** [Taku Arai](#)  
**To:** [Hiser, Matthew](#)  
**Cc:** [Tregoning, Robert](#); [Purtscher, Patrick](#); "[HIGUCHI, Sadao](#)"  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Tuesday, February 28, 2017 2:29:25 AM

---

Dear Matt

My presentation tiles are as follows;

Session 1

CRIEPI motivations for harvested material research

Session 4

CRIEPI research activities with harvested materials

Best regards,

Taku

\*\*\*\*\*

Dr. Taku Arai

Deputy Associate Vice President

Structural Materials Sector

Materials Science Research Laboratory

Deputy Director,

NPP Maintenance Research Team

Central Research Institute of Electric Power Industry

(CRIEPI)

2-11-1, Iwado Kita, Komae-shi, Tokyo 201-8511 JAPAN

E-mail: [arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)

<http://criepi.denken.or.jp>

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Sent:** Thursday, February 23, 2017 11:07 PM

**To:** Bernhoft, Sherry (sbernhof@epri.com); Dyle, Robin; Jean Smith (jmsmith@epri.com); Ahluwalia, Kawaljit; Richard Reister (Richard.Reister@nuclear.energy.gov); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov); 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; Jackson, John Howard; desire.ndomba@canada.ca

**Cc:** Tregoning, Robert; Purtscher, Patrick

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>)  
by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, please provide me with a presentation title.
2. Please send me your slides (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0IOS055QUU?usp=sharing>) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)



**From:** [Obodoako, Aloysius](#)  
**To:** [Hiser, Matthew](#); [Ramuhalli, Pradeep](#)  
**Subject:** FYI: 02/26/16 Meeting Summary  
**Date:** Monday, February 29, 2016 12:45:52 PM

---

Hey Matt/Pradeep,

The below is a high level summary of our discussion on Friday. I'm sending this for information purposes and so that we are aligned. Let me know if it is inconsistent with your understanding.

Pradeep indicated that he developed a prototype taxonomy that will be used to display the information or lack thereof for components in support of material harvesting. The information used to develop the taxonomy is pulled from various documents (e.g., EMDA, GALL-SLR, LER). PWSCC is the first example that will be used to demonstrate the work done thus far and is scheduled to be complete in less than two weeks. The group scheduled a tentative meeting on March 9, to view a demonstration by PNNL.

*Aloysius Obodoako, P.E.*

Materials Engineer  
U.S. Nuclear Regulatory Commission  
RES/DE/CMB  
Office location: TWFN-10B31  
Office phone: (301)-415-2889  
Email: [Aloysius.Obodoako@nrc.gov](mailto:Aloysius.Obodoako@nrc.gov)

**From:** [Bernhoft, Sherry](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Wednesday, March 1, 2017 5:08:10 PM

---

Matt

I will get overheads to you on Friday for Session 1 – short slide package that is in final review

Thanks

Sherry Bernhoft

**Electric Power Research Institute**

EPRI, Senior Program Manager

1300 West WT Harris Boulevard | Charlotte, NC 28262

704.595.2740 (office)

(b)(6) [REDACTED] (cell)

Email: [sbernhoft@epri.com](mailto:sbernhoft@epri.com)

[www.epri.com](http://www.epri.com)

*Together...Shaping the Future of Electricity*

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Sent:** Wednesday, March 01, 2017 8:45 AM

**To:** Bernhoft, Sherry <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated agenda.

I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive;

<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>.

I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if you have any questions or suggestions for the workshop.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Thursday, February 23, 2017 9:07 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>)  
by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the



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Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Hiser, Matthew](#)  
**To:** ["Tello, Daniel \(CNSC/CCSN\)"](#)  
**Cc:** [Karen Huynh \(khuynh@aecl.ca\)](#); [Ndomba, Désiré \(CNSC/CCSN\)](#)  
**Subject:** RE: RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Wednesday, March 1, 2017 7:53:00 AM

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Hi Dan,

Thank you for sending your slides. You are officially the second set of slides I've received, so well done!

I look forward to meeting each of you at the workshop next week.

Thanks!

Matt

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**From:** Tello, Daniel (CNSC/CCSN) [mailto:[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)]  
**Sent:** Tuesday, February 28, 2017 5:03 PM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** Karen Huynh (khuynh@aecl.ca) <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; Ndomba, Désiré (CNSC/CCSN) <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop Presentations

Hi Matt,

Attached is our presentation for the workshop next week.

Let me know if you have any questions or require anything further.

Regards,

Dan

**Daniel Tello**

**Senior Research Program Officer**

**Regulatory Research and Evaluation Division**

**Canadian Nuclear Safety Commission / Government of Canada**

**[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca) / Tel: 613-995-2609**

**Agent principal du programme de recherche**

**Division de la recherche en réglementation et de l'évaluation**

**Commission canadienne de sûreté nucléaire / Gouvernement du Canada**

**[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca) / Tél: 613-995-2609**

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** February-23-17 9:07 AM  
**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)); Dyle, Robin; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)); Ahluwalia, Kawaljit; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)); 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)); Tello, Daniel (CNSC/CCSN); 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; Jackson, John Howard; Ndomba, Désiré (CNSC/CCSN)  
**Cc:** Tregoning, Robert; Purtscher, Patrick  
**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

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Thanks!

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---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

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2. Please send me your slides (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)



**From:** [Smith, Jean](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] RE: RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Wednesday, March 1, 2017 11:28:26 AM

---

Yes, that's my understanding. Studsvik has to make another submittal to SSM.

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** Wednesday, March 1, 2017 10:16 AM  
**To:** Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>  
**Subject:** RE: RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
[Hopefully this means progress, although I guess it has to go back through an SSM review process?](#)

---

**From:** Smith, Jean [<mailto:jmsmith@epri.com>]  
**Sent:** Wednesday, March 01, 2017 11:01 AM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations

I wasn't able to attend the call, but I understand it went well. Studsvik asked for EPRI's help in preparing their appeal information. EPRI's legal team has provided Studsvik a (lengthy) letter outlining the importance of the Zorita materials (and other materials including flux thimble tubes) to the nuclear industry and the need for transportation of the materials to other facilities for testing. It was signed by our lead counsel.

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** Wednesday, March 1, 2017 9:55 AM  
**To:** Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>  
**Subject:** RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
[Thanks Jean! Any update from the meeting with Studsvik and EPRI last week regarding shipping Zorita materials?](#)

---

**From:** Smith, Jean [<mailto:jmsmith@epri.com>]  
**Sent:** Wednesday, March 01, 2017 10:54 AM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
Hi Matt,  
My presentation is called "Lessons Learned: Harvesting and Shipping of Zorita Materials." I almost had the ppt to you yesterday, but you should have it today.  
Jean

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** Wednesday, March 1, 2017 8:45 AM  
**To:** Bernhoft, Sherry <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpyvan Noordennen@energysolutions.com](mailto:gpyvan Noordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be'

<[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>;  
'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard  
<[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated agenda.

I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive:

<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>.

I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if you have any questions or suggestions for the workshop.

Thanks!

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**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

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Matt

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**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

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1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, please provide me with a presentation title.
2. Please send me your slides (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Hiser, Matthew](#)  
**To:** ["Smith, Jean"](#)  
**Subject:** RE: RE: RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Wednesday, March 1, 2017 1:23:49 PM

---

Sounds good – I've got you in the headcount!

---

**From:** Smith, Jean [mailto:jmsmith@epri.com]  
**Sent:** Wednesday, March 01, 2017 11:29 AM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] RE: RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
BTW, I will join the group for dinner next Tuesday. Thanks!

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Wednesday, March 1, 2017 10:16 AM  
**To:** Smith, Jean <jmsmith@epri.com>  
**Subject:** RE: RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
Hopefully this means progress, although I guess it has to go back through an SSM review process?

---

**From:** Smith, Jean [mailto:jmsmith@epri.com]  
**Sent:** Wednesday, March 01, 2017 11:01 AM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
I wasn't able to attend the call, but I understand it went well. Studsvik asked for EPRI's help in preparing their appeal information. EPRI's legal team has provided Studsvik a (lengthy) letter outlining the importance of the Zorita materials (and other materials including flux thimble tubes) to the nuclear industry and the need for transportation of the materials to other facilities for testing. It was signed by our lead counsel.

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Wednesday, March 1, 2017 9:55 AM  
**To:** Smith, Jean <jmsmith@epri.com>  
**Subject:** RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
Thanks Jean! Any update from the meeting with Studsvik and EPRI last week regarding shipping Zorita materials?

---

**From:** Smith, Jean [mailto:jmsmith@epri.com]  
**Sent:** Wednesday, March 01, 2017 10:54 AM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
Hi Matt,  
My presentation is called "Lessons Learned: Harvesting and Shipping of Zorita Materials." I almost had the ppt to you yesterday, but you should have it today.  
Jean

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Wednesday, March 1, 2017 8:45 AM  
**To:** Bernhoft, Sherry <sbernhof@epri.com>; Dyle, Robin <rdyle@epri.com>; Smith, Jean

<jmsmith@epri.com>; Ahluwalia, Kawaljit <kahluwal@epri.com>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <Richard.Reister@nuclear.energy.gov>; 'leonardk@ornl.gov' <leonardk@ornl.gov>; 'Rosseel, Thomas M.' <rosseeltm@ornl.gov>; 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P. Van Noordennen' <gpvan Noordennen@energysolutions.com>; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <Pradeep.Ramuhalli@pnnl.gov>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca>; 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>; 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>; 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>; 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; Jackson, John Howard <john.jackson@inl.gov>

**Cc:** Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>

**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated agenda.

I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive:

<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>.

I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if you have any questions or suggestions for the workshop.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Thursday, February 23, 2017 9:07 AM

**To:** Bernhoft, Sherry (sbernhof@epri.com) <sbernhof@epri.com>; Dyle, Robin <rdyle@epri.com>; Jean Smith (jmsmith@epri.com) <jmsmith@epri.com>; Ahluwalia, Kawaljit <kahluwal@epri.com>; Richard Reister (Richard.Reister@nuclear.energy.gov) <Richard.Reister@nuclear.energy.gov>; 'leonardk@ornl.gov' <leonardk@ornl.gov>; 'Rosseel, Thomas M.' <rosseeltm@ornl.gov>; 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P. Van Noordennen' <gpvan Noordennen@energysolutions.com>; Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov) <Pradeep.Ramuhalli@pnnl.gov>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca>; 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>; 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>; 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>; 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; Jackson, John Howard <john.jackson@inl.gov>; desire.ndomba@canada.ca

**Cc:** Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>)



by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpyvannoordennen@energysolutions.com](mailto:gpyvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

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Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Hiser, Matthew](#)  
**To:** ["Bernhoft, Sherry \(sbernhoft@epri.com\)"; "Dyle, Robin"; "Jean Smith \(jmsmith@epri.com\)"; "Ahluwalia, Kawaljit"; "Richard Reister \(Richard.Reister@nuclear.energy.gov\)"; "leonardk@ornl.gov"; "Rosseel, Thomas M."; "William F Zipp \(Generation - 4\)"; "Gerard P. Van Noordennen"; "Ramuhalli, Pradeep \(Pradeep.Ramuhalli@pnnl.gov\)"; "daniel.tello@canada.ca"; "Uwe.Jendrich@grs.de"; "rachid.chaouadi@sckcen.be"; "arait@criepi.denken.or.jp"; "alpanfa@westinghouse.com"; Jackson, John Howard Tregoning, Robert; Purtscher, Patrick](#)  
**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Wednesday, March 1, 2017 9:45:28 AM  
**Attachments:** [Harvesting Workshop Draft Agenda.docx](#)

**Note to requester:** The attachment is immediately following.

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Matt

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**Cc:** Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

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Thanks!



Matt

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

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**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

# Ex-Plant Materials Harvesting Workshop Draft Agenda

Tuesday, March 7

Session	Time	Organization	Speaker	Presentation Title
Intro	8:00	NRC		Welcome and Introduction to Workshop
1	8:15 – 8:45	DOE	Rich Reister	DOE Perspectives on Material Harvesting
		EPRI	Sherry Bernhoft	EPRI Perspective on Harvesting Projects
		NRC	Robert Tregoning	NRC Perspective on Motivation for Harvesting
		GRS	Uwe Jendrich	Role of GRS in Decommissioning and LTO
		CRIEPI	Taku Arai	CRIEPI Motivations for Harvested Material
	8:45 – 9:45	DISCUSSION		
9:45-10:00		BREAK		
2	10:00 – 10:20	PNNL (for NRC)	Pradeep Ramuhalli	Data Needs Best Addressed By Harvesting
	10:20 – 10:30	NRC	Matthew Hiser	High-Priority Data Needs for Harvesting
	10:30 – 10:55	DOE	Keith Leonard	LWRS Program Perspective on the Technical Needs for Harvesting
	10:55 – 11:20	SCK-CEN	Rachid Chaouadi	Review of past RPV sampling test programs and perspective for long term operation
	11:20 – 11:45	Westinghouse	Arzu Alpan	Importance of Harvesting to Evaluate Radiation Effects on Concrete Properties
	11:45 – 12:30	DISCUSSION		
12:30 – 2:00		LUNCH		
3	2:00 – 2:10	NRC	Matthew Hiser	Sources of Materials: Past NRC Harvesting and U.S. Decommissioning Plants
	2:10 – 2:35	EPRI	Al Ahluwalia	Harvesting Plans for Materials Aging Degradation Research in Korea and Sweden
	2:35 – 2:50	DOE/ORNL	Tom Rosseel	
	2:50 – 3:00	DOE/INL	John Jackson	NSUF Material Sample Library
	3:00 – 3:15	Energy Solutions	Gerry van Noordennen	Zion Material Harvesting Program
	3:15 – 3:30	Westinghouse	Arzu Alpan	Potential Harvesting of Concrete from Mihama Unit 1
	3:30 – 3:45	BREAK		
	3:45 – 4:00	GRS	Uwe Jendrich	Plants in Decommissioning in Germany
	4:00 – 4:15	CNSC	Daniel Tello	Evaluating Structures, Systems & Components from Decommissioned/Decommissioning Nuclear Facilities in Canada
	4:15 – 5:00	DISCUSSION		

Wednesday, March 8

Session	Time	Organization	Speaker	Presentation Title
4	8:00 – 8:30	EPRI	Jean Smith	
	8:30 – 9:00	DOE	Tom Rosseel	
	9:00 – 9:30	NRC	Matthew Hiser	NRC Perspective on Harvesting Experience and Lessons Learned
	9:30 – 10:00	CRIEPI	Taku Arai	CRIEPI Research Activities with Harvested Materials
	10:00 – 10:15	BREAK		
	10:15 - 10:45	Energy Solutions	Gerry van Noordennen	Zion Harvesting Experience and Lessons Learned
	10:45 - 11:15	Dominion	Bill Zipp	Kewaunee Insights on Material Harvesting
	11:15 – 12:00	DISCUSSION		
12:00 – 1:30		LUNCH		
5	1:30 – 1:45	PNNL (for NRC)	Pradeep Ramuhalli	Technical Information Needed for Informed Harvesting Decisions
	1:45 – 2:30	DISCUSSION		
	2:30 – 3:00	Action Items and Next Steps		
	3:00 – 4:00	EPRI	Sherry Bernhoft	Closing Thoughts
		DOE	Rich Reister	
		NRC	Robert Tregoning	
ALL				



**From:** [Tregoning, Robert](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** RE: RE: Accepted: FW: SCK Harvesting Project  
**Date:** Wednesday, March 1, 2017 7:38:41 AM

---

Great, thanks so much for your help with this....

Robert Tregoning  
Technical Advisor for Materials  
US Nuclear Regulatory Commission  
Two White Flint North, M/S T-10 A36  
11545 Rockville Pike  
Rockville, MD 20852-2738  
ph: 301-415-2324  
fax: 301-415-6671

-----Original Message-----

From: Hiser, Matthew  
Sent: Wednesday, March 01, 2017 7:38 AM  
To: Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>  
Subject: RE: RE: Accepted: FW: SCK Harvesting Project

Thanks Rob, then I'll leave his VARS as-is. I have him registered to be here from Mon - Wed with check-in on Monday at OWFN lobby.

-----Original Message-----

From: Tregoning, Robert  
Sent: Wednesday, March 01, 2017 6:45 AM  
To: Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
Subject: FW: RE: Accepted: FW: SCK Harvesting Project

Guy is now coming to the meeting on Monday.....

Robert Tregoning  
Technical Advisor for Materials  
US Nuclear Regulatory Commission  
Two White Flint North, M/S T-10 A36  
11545 Rockville Pike  
Rockville, MD 20852-2738  
ph: 301-415-2324  
fax: 301-415-6671

-----Original Message-----

From: Chaouadi Rachid [<mailto:rachid.chaouadi@sckcen.be>]  
Sent: Wednesday, March 01, 2017 4:27 AM  
To: Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>  
Cc: [guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)  
Subject: [External\_Sender] RE: Accepted: FW: SCK Harvesting Project

Dear Rob

I contacted Guy (email : [guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)), he is expecting your invitation to join the Monday meeting.  
Looking forward to seeing you soon

Rachid

-----Original Message-----

From: Tregoning, Robert [<mailto:Robert.Tregoning@nrc.gov>]

Sent: dinsdag 28 februari 2017 21:34

To: Chaouadi Rachid <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>

Subject: RE: Accepted: FW: SCK Harvesting Project

Sounds good; thanks Rachid....

Robert Tregoning

Technical Advisor for Materials

US Nuclear Regulatory Commission

Two White Flint North, M/S T-10 A36

11545 Rockville Pike

Rockville, MD 20852-2738

ph: 301-415-2324

fax: 301-415-6671

-----Original Appointment-----

From: Chaouadi Rachid [<mailto:rachid.chaouadi@sckcen.be>]

Sent: Tuesday, February 28, 2017 2:31 PM

To: Tregoning, Robert

Subject: [External\_Sender] Accepted: FW: SCK Harvesting Project

When: Monday, March 06, 2017 3:00 PM-5:00 PM (UTC+01:00) Brussels, Copenhagen, Madrid, Paris.

Where: HQ-TWFN-10A73-8p

With respect to Guy, I will let you know tomorrow. Thanks again Rachid

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**From:** [William F Zipp \(Generation - 4\)](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Thursday, March 2, 2017 1:29:10 PM  
**Attachments:** [Kewaunee Insights on Material Harvesting\(2\).pptx](#)

Note to requester: Attachment is immediately following.

Matt - Slides attached. If you need anything else please let me know.

Thanks,  
Bill

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Wednesday, March 01, 2017 8:47 AM  
**To:** 'Bernhoft, Sherry (sbernhoft@epri.com)'; 'Dyle, Robin'; 'Jean Smith (jmsmith@epri.com)'; 'Ahluwalia, Kawaljit'; 'Richard Reister (Richard.Reister@nuclear.energy.gov)'; 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; William F Zipp (Generation - 4); 'Gerard P. Van Noordennen'; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)'; 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; Jackson, John Howard  
**Cc:** Tregoning, Robert; Purtscher, Patrick  
**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated agenda.

I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive:

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I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if you have any questions or suggestions for the workshop.

Thanks!

Matt

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**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>  
**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations  
Dear Presenters:



Friendly reminders:

- Please provide presentation title by February 28.
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Matt

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**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, please provide me with a presentation title.
2. Please send me your slides (either via email or upload to Google Drive:  
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by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research  
Division of Engineering | Corrosion and Metallurgy Branch  
Phone: 301-415-2454 | Office: TWFN 10D62  
[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

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# Kewaunee Power Station

## Insights on Material Harvesting

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# Kewaunee Power Station

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# Kewaunee Power Station

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2-Loop Westinghouse PWR (590MWe)

- Construction permit August 1968
- Operating license December 1973
- Initial operating license expiration December 2013
- Renewed Operating License Issued February 2011
- Shutdown decision (unexpected) October 2012
- Permanently Shutdown May 2013
- ERO offsite response eliminated November 2014
- All nuclear fuel in dry storage July 2017



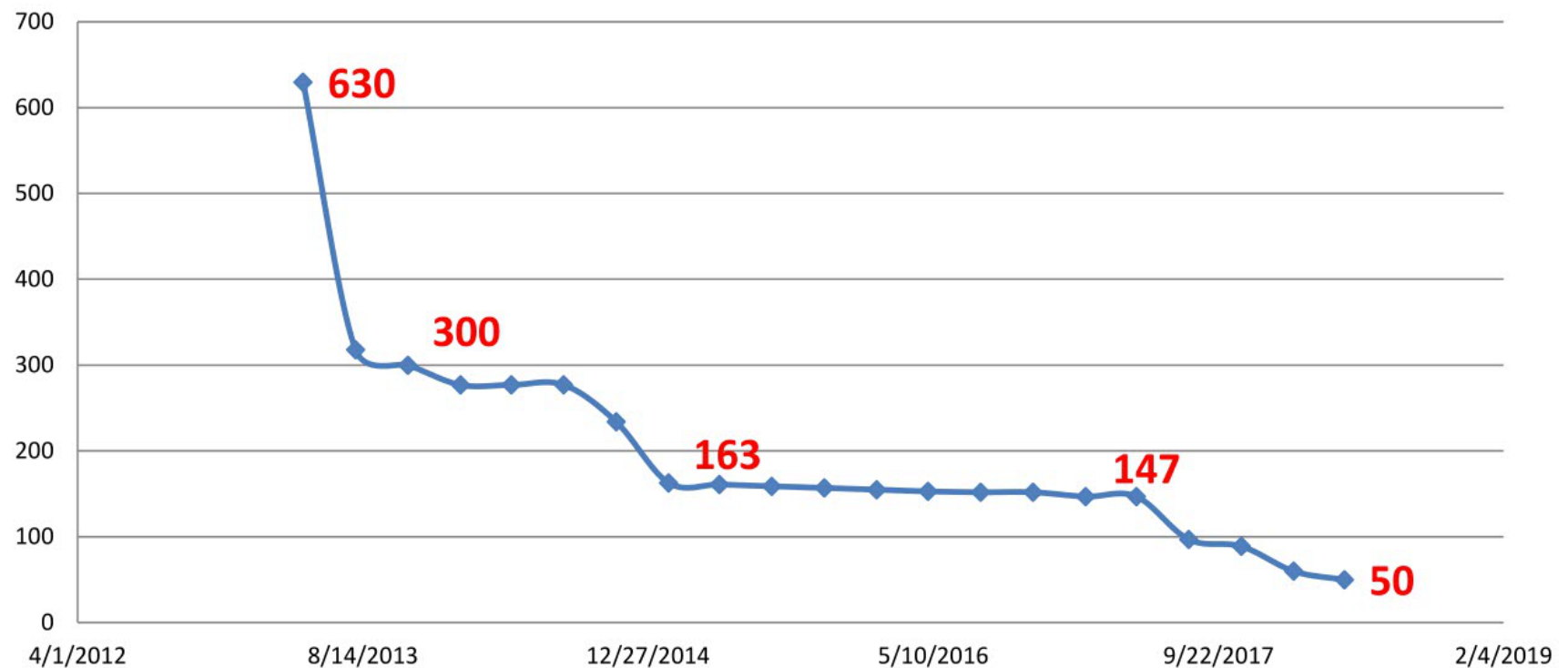
# Kewaunee Perspective

---

- Top priority for decommissioning plants is **preserving and good stewardship of the decommissioning trust fund**
- Highest fund drain is staffing
- Station electrical use also expensive
- Initial decommissioning actions focus on safety and cost reduction.
  - ◇ Use initial required large staff to prepare plant for long term dormancy and decommissioning
  - ◇ Abandon or downsize equipment to reduce ongoing costs.
  - ◇ Then reduce staff commensurate with reduction in risk

# Kewaunee Power Station

**Kewaunee Decommissioning Staffing Reductions**



# Kewaunee Perspective

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- Timing is everything!
- Perhaps best discussed via an example:
  - ◇ Reactor vessel surveillance capsules
  - ◇ Two remain in the vessel
  - ◇ Logistical considerations:



# Kewaunee Perspective

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- Circulating Water pumps were high energy consumers
- Therefore we wanted to retire them as soon as possible
- Circulating Water pumps were high capacity, low head, very good at dilution for meeting ODCM requirement for radiological discharges
- Without CW pumps, much smaller capacity service water pumps will be used in the future for dilution..

# Kewaunee Perspective

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- Therefore – prior to retiring CW pumps, we processed as much radioactive water as possible
- This included draining the RCS
- RCS at Kewaunee has no loop isolation valves
- RCS today is drained to the bottom of the cold legs, about 7 feet below the RV flange
- RV internals are installed, RV head is on the vessel, flux thimbles are installed in the vessel

# Kewaunee Perspective

---

- So if we wanted to remove surveillance capsules today we would face unique challenges that would not have been present at initial plant shutdown:
  - ◇ Shielding – need to refill the RV (and cavity?)
  - ◇ Lifting the RV head and internals – polar crane is in place, but maintenance has been discontinued
  - ◇ Qualified staff – Crane operators, RP technicians, maintenance, operators
  - ◇ Rad monitors (many have been abandoned)
  - ◇ Ventilation and atmosphere control, lighting



# Kewaunee Perspective

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- What generic issues could be resolved or simplified by harvesting and additional testing?
- GALL aging management program examples
  - ◇ Electrical cables and connections – test power cables taken from adverse localized environments
  - ◇ SG divider plates; autogenous welds
  - ◇ Buried piping;
  - ◇ Inaccessible power cables (buried; underground)

# Additional Considerations

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- Who will pay?
- Why is the material needed?
  - ◇ “What’s in it for me?”
  - ◇ Are we solving an industry problem? (example – SFP neutron absorbing material GL 2016-01)
  - ◇ Objectively needing more information to determine if we have a new problem?
  - ◇ What’s the plan? What is done with the information gathered? Is there a driver to review impact on existing programs?

# Additional Considerations

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- Need to think ahead, plan ahead
- Some harvesting is very plant condition specific, others maybe not
- What plants will be entering decommissioning in the future?
- Have you reached out to them?
- Scope, Schedule, Budget



# Kewaunee Perspective

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**From:** [Hiser, Matthew](#)  
**To:** [Ahluwalia, Kawaljit](#)  
**Subject:** RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Thursday, March 2, 2017 9:59:00 AM

---

Thanks All!

---

**From:** Ahluwalia, Kawaljit [mailto:kahluwal@epri.com]  
**Sent:** Thursday, March 02, 2017 9:51 AM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Matt,

Here are my slides for the 2:10 PM Tuesday KHNP (Korea) presentation. I am awaiting slides from Ringhals and will send to you once I get them. See you on Tuesday.

Al

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Wednesday, March 01, 2017 9:45 AM  
**To:** Bernhoft, Sherry <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' (<[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' (<[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>  
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Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)

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Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Hiser, Matthew](#)  
**To:** [RICHTER, Mark](#)  
**Subject:** RE: RE: Decommissioning Plants Material Harvesting Meeting  
**Date:** Thursday, March 2, 2017 7:48:55 PM

---

Sorry, I didn't get it out today. You'll see it in the morning.

Basic info: NRC HQ, starts at 8 AM on Tuesday and Wednesday March 7 & 8.

Thanks!  
Matt

---

From: RICHTER, Mark [mar@nei.org]  
Sent: Thursday, March 2, 2017 5:14 PM  
To: Hiser, Matthew  
Subject: [External\_Sender] RE: Decommissioning Plants Material Harvesting Meeting

I didn't receive an email?

Mark A. Richter, Ph.D.  
Senior Project Manager  
Fuel and Decommissioning Programs  
Nuclear Energy Institute  
P: 202-739-8106  
M: (b)(6)

From: Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
Sent: Thursday, March 2, 2017 3:27 PM  
To: RICHTER, Mark  
Cc: McCULLUM, Rodney  
Subject: RE: Decommissioning Plants Material Harvesting Meeting

Hi Mark,

OK, we rechecked our space here and we should be alright spacewise to have you join the workshop. Thanks for reaching out. I'll be sending an email shortly to all attendees and be sure to include you on it.

Thanks!  
Matt

Matthew Hiser  
Materials Engineer  
US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research  
Division of Engineering | Corrosion and Metallurgy Branch  
Phone: 301-415-2454 | Office: TWFN 10D62  
Matthew.Hiser@nrc.gov<<mailto:Matthew.Hiser@nrc.gov>>

From: RICHTER, Mark [<mailto:mar@nei.org>]  
Sent: Thursday, March 02, 2017 10:39 AM  
To: Hiser, Matthew <Matthew.Hiser@nrc.gov<<mailto:Matthew.Hiser@nrc.gov>>>  
Cc: McCULLUM, Rodney <rxm@nei.org<<mailto:rxm@nei.org>>>; RICHTER, Mark <mar@nei.org<<mailto:mar@nei.org>>>  
Subject: [External\_Sender] Decommissioning Plants Material Harvesting Meeting

Matt

I appreciate you taking a few minutes to talk this morning. As the NEI project manager for the industry Decommissioning Task Force and the NEI Materials SME, I think my participation would add some beneficial perspectives. I look forward to hearing from you later today.

Best regards,

Mark A. Richter, Ph.D.  
Senior Project Manager  
Fuel and Decommissioning Programs

Nuclear Energy Institute  
1201 F Street, NW, Suite 1100  
Washington, DC 20004  
www.nei.org<<http://www.nei.org/>>

P: 202-739-8106

M:   (b)(6)

E: mar@nei.org<<mailto:mar@nei.org>>

nuclear. clean air energy.

[<http://resources.nei.org/email/DNPEmailSignature.jpg>]<<http://www.nuclearmatters.com/>>

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---

Sent through www.intermedia.com



**From:** [Hiser, Matthew](#)  
**To:** [Rosseel, Thomas M.](#)  
**Subject:** RE: Re: Ex-plant Materials Harvesting Workshop  
**Date:** Thursday, March 2, 2017 3:26:00 PM

---

Thanks Tom!

---

**From:** Rosseel, Thomas M. [mailto:[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)]  
**Sent:** Thursday, March 02, 2017 1:54 PM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** Leonard, Keith J. <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; Sokolov, Mikhail A. <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>  
**Subject:** [External\_Sender] Re: Ex-plant Materials Harvesting Workshop  
**Importance:** High

Matt,

I plan to join the no host dinner with the other attendees on Tuesday evening.

The titles of my presentations are:

Materials Harvested by the LWRS Program (Session 3) and

LWRS Program: Harvesting Lessons Learned (Session 4).

Regards,

Tom

Thomas M. Rosseel, Ph. D.

Past Chair, International Committee on Irradiated Concrete and

Materials Aging and Degradation, Deputy Pathway Lead

Light Water Reactor Sustainability Program

Materials, Science and Technology Division

Oak Ridge National Laboratory

4500S MS 6132

PO Box 2008

Oak Ridge, TN 37831

TEL: 1-865-574-5380

[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)

---

**From:** "[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)" <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Date:** Thursday, February 23, 2017 at 2:24 PM

**To:** Sherry Bernhoft <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>, Robin Dyle <[rdyle@epri.com](mailto:rdyle@epri.com)>, "Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com))" <[jmsmith@epri.com](mailto:jmsmith@epri.com)>, "Ahluwalia, Kawaljit" <[kahluwal@epri.com](mailto:kahluwal@epri.com)>, Richard Reister <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>, "Leonard, Keith J." <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>, "T. M. Rosseel" <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>, "William F Zipp (Generation - 4)" <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>, Gerard Van Noordennen <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>, "Ramuhalli, Pradeep" <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>, "[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)" <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>, "[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)" <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>, "[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)" <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>, "Arai, Taku" <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>, "[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)" <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>, Mikhail Sokolov <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>, "[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)" <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>, "[khuynh@aecl.ca](mailto:khuynh@aecl.ca)" <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>, "[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)" <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>, "[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)" <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>, "[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)" <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>, "Jackson, John Howard" <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>, Roussel Guy <[guy.roussel@Bely.be](mailto:guy.roussel@Bely.be)>, "[john.wagner@inl.gov](mailto:john.wagner@inl.gov)" <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>

**Cc:** "Tregoning, Robert" <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>, "Purtscher, Patrick"

<[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- Please let me know if you plan to join for the dinner with other workshop participants
- If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'Leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov' <[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building. The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. Please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.
2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, please email me a scanned copy of your passport if possible. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

*Phone: 301-415-2454 | Office: TWFN 10D62*

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)



**From:** [Hiser, Matthew](#)  
**To:** ["Roussel Guy"](#)  
**Subject:** RE: REI½: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 3, 2017 2:10:18 PM

---

Dear Guy,  
Sounds good – thanks for the heads up!  
Safe travels and looking forward to the workshop discussion next week!  
Matt

---

**From:** Roussel Guy [mailto:guy.roussel@Belv.be]  
**Sent:** Friday, March 03, 2017 1:40 PM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] REI½: Ex-plant Materials Harvesting Workshop

Dear Matt -

(b)(6)

Thank you for the invitation. Unfortunately I have to decline it. [REDACTED]  
[REDACTED] and my evenings will undoubtedly be busy.

(b)(6)

See you next Monday.

Best regards,

Guy

----- Message d'origine-----

De: Hiser, Matthew [mailto:[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)]

Date: ven. 3/03/2017 14:21

i½: 'Bernhoft, Sherry'; 'Dyle, Robin'; 'Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com))'; 'Ahluwalia, Kawaljit'; 'Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov))'; 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; 'Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov))'; 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; 'sokolovm@ornl.gov'; 'desire.ndomba@canada.ca'; 'khuynh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; Jackson, John Howard; Roussel Guy; 'john.wagner@inl.gov'; 'Riccardella, Pete'; 'RICHTER, Mark'

Cc: Tregoning, Robert; Purtscher, Patrick; Frankl, Istvan

Objet : RE: Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

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If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

Matthew Hiser

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov) <<mailto:Matthew.Hiser@nrc.gov>>

**From:** [Hiser, Matthew](#)  
**To:** ["Bernhoft, Sherry"](#)  
**Subject:** RE: Ex-Plant Harvesting Workshop EPRI 3-7-2017.pptx  
**Date:** Friday, March 3, 2017 7:38:25 AM

---

Thanks Sherry! Looking forward to the workshop next week.

---

**From:** Bernhoft, Sherry [mailto:sbernhoft@epri.com]  
**Sent:** Friday, March 03, 2017 7:34 AM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>; Smith, Jean <jmsmith@epri.com>; Ahluwalia, Kawaljit <kahluwal@epri.com>; Dyle, Robin <rdyle@epri.com>; richard.reister@nuclear.energy.gov; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>  
**Subject:** [External\_Sender] Ex-Plant Harvesting Workshop EPRI 3-7-2017.pptx

Matt

Attached is the EPRI presentation for Session 1 next week.

Please let me know if you have any questions,

Sherry Bernhoft

**Electric Power Research Institute**

EPRI, Senior Program Manager

1300 West WT Harris Boulevard | Charlotte, NC 28262

704.595.2740 (office)

 (cell) (b)(6)

Email: [sbernhoft@epri.com](mailto:sbernhoft@epri.com)

[www.epri.com](http://www.epri.com)

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**From:** [Jendrich, Uwe Dr.](#)  
**To:** [Hiser, Matthew](#)  
**Cc:** [Tregoning, Robert](#); [Purtscher, Patrick](#); [Frankl, Istvan](#); [Michel, Frank Dr.](#)  
**Subject:** [External\_Sender] AW: Ex-plant Materials Harvesting Workshop - Presentations  
**Date:** Friday, March 3, 2017 10:22:11 AM  
**Attachments:** [Role of GRS in Decommissioning.pptx](#)  
[Decommissioning in Germany.pptx](#)

Note to requester: Attachments are immediately following.

Dear Matt,  
Thank you for this information.  
Please find enclosed my two short presentations.  
Kind regards  
Uwe

**Von:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Gesendet:** Freitag, 3. März 2017 14:22

**An:** 'Bernhoft, Sherry'; 'Dyle, Robin'; 'Jean Smith (jmsmith@epri.com)'; 'Ahluwalia, Kawaljit'; 'Richard Reister (Richard.Reister@nuclear.energy.gov)'; 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)'; 'daniel.tello@canada.ca'; Jendrich, Uwe Dr.; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; 'sokolovm@ornl.gov'; 'desire.ndomba@canada.ca'; 'khuynh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; Jackson, John Howard; 'Roussel Guy'; 'john.wagner@inl.gov'; 'Riccardella, Pete'; 'RICHTER, Mark'

**Cc:** Tregoning, Robert; Purtscher, Patrick; Frankl, Istvan

**Betreff:** RE: Ex-plant Materials Harvesting Workshop

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If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

# **Role of GRS in Decommissioning and LTO**

Uwe Jendrich, GRS March 7, 2017 Ex-Plant Materials  
Harvesting Workshop US NRC Headquarter, Rockville/MD,  
USA

## Introduction

GRS with its staff of about 430 is Main Technical Support Organization (TSO) in nuclear safety for the German federal government BMUB (Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety), BMBF (Federal Ministry of Education and Research), BMWi (Federal Ministry of Economic Affairs and Energy) and AA (Federal Ministry of Foreign Affairs) and GRS participates in international activities of IAEA, OECD, EU (DG Energy, DG RTD, DG DevCo), ...



## Services of GRS in Decommissioning of Nuclear Installations

- **Advice and assessment concrete technical and legal issues strategy and planning of decommissioning projects**  
**Project management, progress monitoring and documentation of decommissioning projects**  
**Support in the drafting of regulation taking into account national specifics**  
**Know-how transfer individually tailored seminars and coaching**  
**elaborations on specific issues**



## GRS Customers and References in Decommissioning

- **BMUB: Various projects (since 1998): technical and organizational requirements analysis of technical aspects, assessment of application and licensing documents**
- **BMBF: Project management (since 2013): 'Decommissioning, dismantling and waste management projects relating to nuclear test facilities'**
- **IAEA: Decommissioning and Remediation of Damaged Nuclear Facilities (DAROD) (since 2015)**
- **Decommissioning Risk Management (DiRiMa) (since 2012)**
- **Constraints to implementing decommissioning and environmental remediation programs (CIDER) (2013-2015)**
- **EBRD: Assistance to Bulgaria Nuclear Regulatory Agency (BNRA) decommissioning of Kozloduy NPP units 1-4 (since 2008)**



Federal Ministry for the  
Environment, Nature Conservation,  
Building and Nuclear Safety



Federal Ministry  
of Education  
and Research



**IAEA**  
International Atomic Energy Agency



**European Bank**  
for Reconstruction and Development

## GRS Activities in Ageing Management and Long Term Operation

- **BMUB: Evaluation of nat. & internat. operating experience**  
**Nat. & internat. Regulations and Guidelines on LTO, Specific technical aspects**  
**AMEU: Several INSC projects on Regulatory aspects of JRC Database EMAR (R&D results on ageing of materials)**  
**IAEA: International IGALLOECD/NEA: Database projects CODAP (components), CADAK (cable)**  
**WG IAGE, NUGENIAANVS (NL): Assessment of licensing documents for LTO of Borssele**

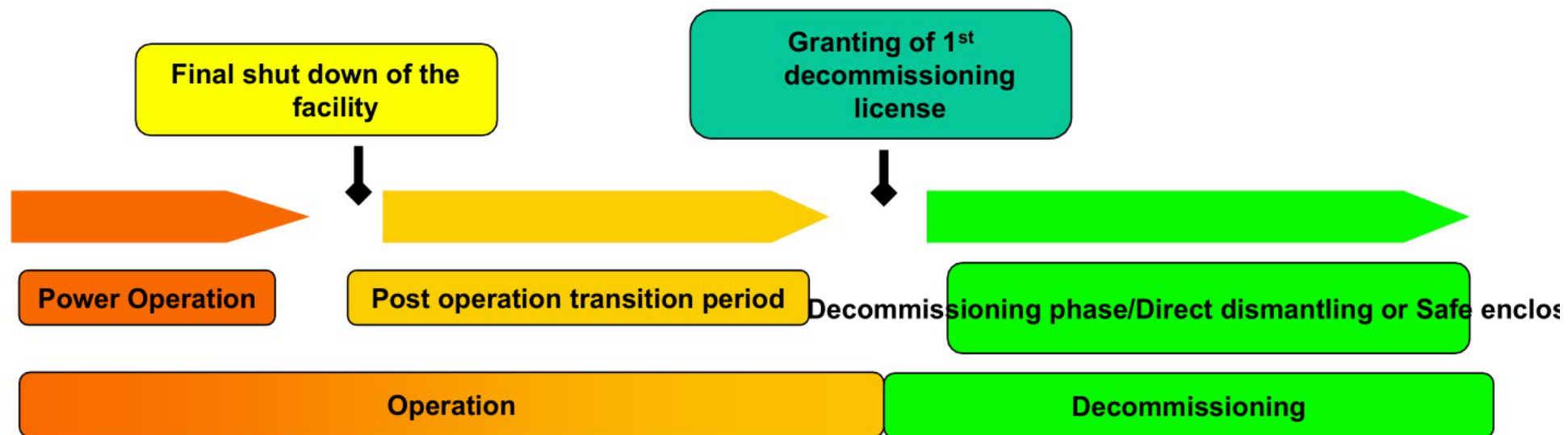


# Plants in Decommissioning in Germany

Uwe Jendrich, GRS  
March 7, 2017  
Ex-Plant Materials  
Harvesting Workshop US NRC Headquarter, Rockville/MD,  
USA

# Basic Requirements for Decommissioning

## Regulation of decommissioning in Germany



## The German Regulatory System

- Basic requirements For a nuclear facility the atomic energy act allows either to immediate dismantle or to dismantle after a safe enclosure Note: no entombment (near surface disposal) is allowed

The operator of a nuclear facility is fully responsible for the decommissioning and dismantling of a nuclear facility. There are 4 operators of commercial nuclear reactors in Germany:

PreussenElektra <sup>1)</sup>	(KKS, KKI, KKK, KWG, KKG, KBR, KKE)
EnBW <sup>2)</sup>	(KWO, GKN, KKP)
RWE	(KKB, KKK)
Vattenfall	(KMK, KRB, KWB)



For any requests on materials: Contact the operator!

1) until recently known as E.ON  
KernkraftEnergie Baden-Württemberg



## Overview on Decommissioning Projects in Germany

- Past and current decommissioning projects of Prototype or Commercial Reactors

Name	Abbrev.	Reactor type	Power MW <sub>e</sub>	Decom. started	Strategy
Rheinsberg	KKR	WWER	70	1995	UC
Compact Sodium Cooled Reactor	KKN	SNR	21	1993	UC
Multipurpose Research R.	MZFR	PWR/D <sub>2</sub> O	57	1987	UC
Obrigheim	KWO	PWR	357	2008	UC
Neckarwestheim 1	GKN-1	PWR	840	2017	UC
Isar-1	KKI-1	BWR	912	2017	UC
Gundremmingen-A	KRB-A	BWR	250	1983	RCA KRB-II
Greifswald 1-5	KGR 1-5	WWER	440	1995	UC
Lingen	KWL	BWR	268	1985	UC after SE

*UC: unconditional clearance*

*RCA: radiation controlled area, new license  
safe enclosure*

## Overview on Decommissioning Projects in Germany

- Past and current decommissioning projects of Prototype or Commercial Reactors

Name	Abbrev.	Reactor type	Power MW <sub>e</sub>	Decom. started	Strategy
Stade	KKS	PWR	672	2005	UC
Research Reactor Jülich	AVR	HTR	15	1994	UC
Thorium High-Temperature -Reaktor	THTR- 300	HTR	308	1993	SE since 1997
Würgassen	KWW	BWR	670	1997	UC
Mülheim-Kärlich	KMK	PWR	1302	2004	UC
Hot-Steam Reactor Grosswelzheim	HDR	HDR	25	1983	UC since 1998
Niederaichbach	KKN	DRR/D <sub>2</sub> O	106	1975	UC since 1994
Test-Reactor Kahl	VAK	BWR	16	1988	UC since 2010

*UC: unconditional clearance*  
*SE: safe enclosure*

## NPPs Preparing for Decommissioning in Germany

- Shut down Commercial Reactors that have no decommissioning license granted yet

Name	Abbrev.	Reactor type	Power MW <sub>e</sub>	Date of application
Philippsburg-1	KKP-1	BWR	926	2013 / 2014
Grafenrheinfeld	KKG	PWR	1345	2014
Biblis-A	KWB-A	PWR	1225	2012
Biblis-B	KWB-B	PWR	1300	2012
Unterweser	KKU	BWR	1410	2012 / 2013
Brunsbüttel	KKB	BWR	806	2012 / 2014
Krümmel	KKK	BWR	1402	2015

RPV design fluence  
after 40 years  
 $< 5 \cdot 10^{18} \text{ n/cm}^2$



# NPPs Preparing for Decommissioning in Germany

## ▪ Commercial Reactors in operation

Name	Abbrev.	Reactor type	Power MW <sub>e</sub>	Anticipated date of final shutdown
Gundremmingen-B	KRB-II-B	BWR	1344	31.12.2017
Philippsburg-2	KKP-2	PWR	1468	31.12.2019
Gundremmingen-C	KRB-II-C	BWR	1344	31.12.2021
Grohnde	KWG	PWR	1430	31.12.2021
Brokdorf	KBR	PWR	1480	31.12.2021
Emsland	KKE	PWR	1406	31.12.2022
Isar-2	KKI-2	PWR	1485	31.12.2022
Neckarwestheim-2	GKN-2	PWR	1400	31.12.2022

## Overview on Decommissioning Projects in Germany

- Past and current decommissioning projects of Research Reactors
  - Total: 35
  - Removed: 29
  - Final Shut down / under dismantling: 4
  - Safe Enclosure: 2
- Variety of types of Research Reactors
  - Argonaut type
  - Critical assembly
  - Educational reactors
  - Liquid homogenous reactor
  - Propulsion reactor (type)
  - Heavy Water reactor (incl. DIDO type)

***Nuclear Ship Otto Hahn during operation***



***Rad. transport of dismantled pressure vessel***



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Noell GmbH

## Overview on Decommissioning Projects in Germany

- Past and current decommissioning projects of Prototype or Commercial Reactors

Total: 21 Removed: 3 Final shut down / under dismantling: 17 Safe enclosure:

1 Reactor types: PWR BWR Fast Breeder High Temp Gas Cooled / Water Gas Cooled



© Forschungszentrum Karlsruhe



**Thank you for your attention!**

**From:** [Hiser, Matthew](#)  
**To:** ["Leonard, Keith J."](#)  
**Subject:** RE: Re: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 3, 2017 1:20:02 PM

---

Thanks Keith! I downloaded your slides through your link.  
Looking forward to the discussion next week. Safe travels!  
Matt

---

**From:** Leonard, Keith J. [mailto:[leonardk@ornl.gov](mailto:leonardk@ornl.gov)]  
**Sent:** Friday, March 03, 2017 12:46 PM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** Rosseel, Thomas M. <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>  
**Subject:** [External\_Sender] Re: Ex-plant Materials Harvesting Workshop

Matt,

My previous email to you bounced back as undeliverable, presumably due to the file size. Below is a link to the ORNL file sharing site to obtain the DOE slides for Session 2 of the Harvesting Workshop: Materials Harvesting Workshop-Session 2 LWRS presentation.pdf 9422.88 KB

You can get it from

<<http://dmz-ftp1.ornl.gov/filedownload?ftp=e;dir=uP27iCYcjrD7>>

NOTE: If no previous action is taken, this file will automatically be deleted on 31-Mar-2017.

Thank you,  
Keith

---

**From:** "Leonard, Keith J." <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>  
**Date:** Friday, March 3, 2017 at 12:39 PM  
**To:** "Hiser, Matthew" <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** Thomas Rosseel <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>  
**Subject:** Re: Ex-plant Materials Harvesting Workshop

Matt,

Attached are the LWRS program slides for session 2 of the harvesting workshop.

Keith

---

**From:** "Leonard, Keith J." <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>  
**Date:** Thursday, March 2, 2017 at 2:01 PM  
**To:** "Hiser, Matthew" <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** Thomas Rosseel <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>  
**Subject:** Re: Ex-plant Materials Harvesting Workshop

Matt,

I will attend the dinner for the workshop.

Tom and I will be sending you slides tomorrow. We are doing a final review.

Keith

---

**From:** "Hiser, Matthew" <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Date:** Thursday, February 23, 2017 at 2:24 PM  
**To:** "Bernhoft, Sherry" <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>, Robin Dyle <[rdyle@epri.com](mailto:rdyle@epri.com)>, Jean Smith <[jmsmith@epri.com](mailto:jmsmith@epri.com)>, "Ahluwalia, Kawaljit" <[kahluwal@epri.com](mailto:kahluwal@epri.com)>, "Richard Reister" <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)> <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>, "Leonard, Keith J." <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>, Thomas Rosseel <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>, "William F Zipp (Generation - 4)"

<[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>, "Gerard P. Van Noordennen"  
<[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>, Pradeep Ramuhalli <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>,  
"daniel.tello@canada.ca" <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>, "Uwe.Jendrich@grs.de"  
<[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>, "rachid.chaouadi@sckcen.be" <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>,  
"arait@criepi.denken.or.jp" <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>, "alpanfa@westinghouse.com"  
<[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>, "Sokolov, Mikhail A." <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>,  
"desire.ndomba@canada.ca" <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>, "khuyinh@aecl.ca"  
<[khuyinh@aecl.ca](mailto:khuyinh@aecl.ca)>, "higuchi@criepi.denken.or.jp" <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>,  
"kazunobu\_sakamoto@nsr.go.jp" <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>, "chimi.yasuhiro@jaea.go.jp"  
<[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>, "Jackson, John Howard" <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>, Roussel Guy  
<[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>, "john.wagner@inl.gov" <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>  
**Cc:** "Tregoning, Robert" <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>, "Purtscher, Patrick"  
<[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear workshop attendees:

Friendly reminder for attendees about dinner and passports (highlighted below):

- Please let me know if you plan to join for the dinner with other workshop participants
- If you are traveling from outside the U.S., please email me a scanned copy of your passport if possible.

I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>;  
Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov))  
<[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel,  
Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>;  
'Gerard P. Van Noordennen' <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; Ramuhalli, Pradeep  
([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca'  
<[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>;  
'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp'  
<[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>;  
'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca'  
<[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuyinh@aecl.ca' <[khuyinh@aecl.ca](mailto:khuyinh@aecl.ca)>; 'higuchi@criepi.denken.or.jp'  
<[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>;  
'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'leo.fifield@pnnl.gov'  
<[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these



slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building. The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. **Please let me know if you plan to join for the dinner with other workshop participants**, so I can make the appropriate reservation.
2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, **please email me a scanned copy of your passport if possible**. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Hiser, Matthew](#)  
**To:** ["Rosseel, Thomas M."](#)  
**Subject:** RE: Re: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 3, 2017 3:33:14 PM

---

Thanks Tom! Looking forward to the workshop. Safe travels!

Matt

---

**From:** Rosseel, Thomas M. [mailto:[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)]  
**Sent:** Friday, March 03, 2017 3:19 PM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** Leonard, Keith J. <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; Sokolov, Mikhail A. <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; Chen, Xiang <[chenx2@ornl.gov](mailto:chenx2@ornl.gov)>; Nanstad, Randy K. <[nanstadrk@ornl.gov](mailto:nanstadrk@ornl.gov)>; Duckworth, Robert C. <[duckworthrc@ornl.gov](mailto:duckworthrc@ornl.gov)>  
**Subject:** [External\_Sender] Re: Ex-plant Materials Harvesting Workshop  
**Importance:** High

Matt,

Attached are pdf files of my slides for the Session 3 and Session 4 presentations.

Looking forward to the meeting.

Best regards,

Tom

**Thomas M. Rosseel, Past Chairman,**  
**International Committee on Irradiated Concrete**  
Materials Aging and Degradation, Deputy Pathway Lead  
Light Water Reactor Sustainability Program  
Materials, Science and Technology Division  
Oak Ridge National Laboratory  
4500S MS 6132  
PO Box 2008  
Oak Ridge, TN 37831  
TEL: 1-865-574-5380  
[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)

---

**From:** "Leonard, Keith J." <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>  
**Date:** Thursday, March 2, 2017 at 2:01 PM  
**To:** "[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)" <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Cc:** "T. M. Rosseel" <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>  
**Subject:** Re: Ex-plant Materials Harvesting Workshop

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Keith

---

**From:** "Hiser, Matthew" <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Date:** Thursday, February 23, 2017 at 2:24 PM  
**To:** "Bernhoft, Sherry" <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>, Robin Dyle <[rdyle@epri.com](mailto:rdyle@epri.com)>, Jean Smith <[jmsmith@epri.com](mailto:jmsmith@epri.com)>, "Ahluwalia, Kawaljit" <[kahluwal@epri.com](mailto:kahluwal@epri.com)>, "Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov))" <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>, "Leonard, Keith J." <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>, Thomas Rosseel <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>, "'William F Zipp (Generation - 4)'" <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>, "'Gerard P. Van Noordennen'"

<[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>, Pradeep Ramuhalli <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>, "[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)" <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>, "[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)" <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>, "[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)" <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>, "[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)" <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>, "[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)" <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>, "Sokolov, Mikhail A." <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>, "[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)" <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>, "[khuynh@aecl.ca](mailto:khuynh@aecl.ca)" <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>, "[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)" <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>, "[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)" <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>, "[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)" <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>, "Jackson, John Howard" <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>, Roussel Guy <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>, "[john.wagner@inl.gov](mailto:john.wagner@inl.gov)" <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>

**Cc:** "Tregoning, Robert" <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>, "Purtscher, Patrick" <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

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I have also attached the draft agenda (awaiting titles for a few presentations).

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; '[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; '[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; '[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; '[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; '[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; '[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; '[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; '[khuynh@aecl.ca](mailto:khuynh@aecl.ca)' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; '[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; '[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; '[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; '[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)' <[leo.fifield@pnnl.gov](mailto:leo.fifield@pnnl.gov)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.



The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building. The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building. I would like to request input from attendees on two items:

1. We are making reservations at a nearby restaurant for dinner on Tuesday, March 7. **Please let me know if you plan to join for the dinner with other workshop participants**, so I can make the appropriate reservation.
2. If you are traveling from outside the U.S., please be sure to bring two forms of ID (passport and a second photo ID). Also, **please email me a scanned copy of your passport if possible**. This will speed the security check-in process.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Hiser, Matthew](#)  
**To:** ["Bernhoft, Sherry"](#); ["Dyle, Robin"](#); ["Jean Smith \(jmsmith@epri.com\)"](#); ["Ahluwalia, Kawaljit"](#); ["Richard Reister \(Richard.Reister@nuclear.energy.gov\)"](#); ["leonardk@ornl.gov"](#); ["Rosseel, Thomas M."](#); ["William F Zipp \(Generation - 4\)"](#); ["Gerard P. Van Noordennen"](#); ["Ramuhalli, Pradeep \(Pradeep.Ramuhalli@pnnl.gov\)"](#); ["daniel.tello@canada.ca"](#); ["Uwe.Jendrich@grs.de"](#); ["rachid.chaouadi@sckcen.be"](#); ["arait@criepi.denken.or.jp"](#); ["alpanfa@westinghouse.com"](#); ["sokolovm@ornl.gov"](#); ["desire.ndomba@canada.ca"](#); ["khuyinh@aecl.ca"](#); ["higuchi@criepi.denken.or.jp"](#); ["kazunobu\\_sakamoto@nsr.go.jp"](#); ["chimi.vasuhiro@jaea.go.jp"](#); ["Jackson, John Howard"](#); ["Roussel Guy"](#); ["john.wagner@inl.gov"](#); ["Riccardella, Pete"](#); ["RICHTER, Mark"](#)  
**Cc:** [Tregoning, Robert](#); [Purtscher, Patrick](#); [Frankl, Istvan](#)  
**Subject:** RE: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 3, 2017 8:21:36 AM  
**Attachments:** [Harvesting Workshop Final Agenda.docx](#)  
[Ex-Plant Materials Harvesting Workshop.pptx](#)  
[White Flint Map.docx](#)

Note to requester: Attachments are immediately following.

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building. The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building. If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

# Ex-Plant Materials Harvesting Workshop Agenda

Tuesday, March 7

Session	Time	Organization	Speaker	Presentation Title
Intro	8:00	NRC	Robert Tregoning	Welcome and Introduction to Workshop
1	8:15 – 8:45	DOE	Rich Reister	DOE Perspectives on Material Harvesting
		EPRI	Sherry Bernhoft	EPRI Perspective on Harvesting Projects
		NRC	Robert Tregoning	NRC Perspective on Motivation for Harvesting
		GRS	Uwe Jendrich	Role of GRS in Decommissioning and LTO
		CRIEPI	Taku Arai	CRIEPI Motivations for Harvested Material
	8:45 – 9:45	DISCUSSION		
9:45-10:00		BREAK		
2	10:00 – 10:20	PNNL (for NRC)	Pradeep Ramuhalli	Data Needs Best Addressed By Harvesting
	10:20 – 10:30	NRC	Matthew Hiser	High-Priority Data Needs for Harvesting
	10:30 – 10:55	DOE	Keith Leonard	LWRS Program Perspective on the Technical Needs for Harvesting
	10:55 – 11:20	SCK-CEN	Rachid Chaouadi	Review of past RPV sampling test programs and perspective for long term operation
	11:20 – 11:45	Westinghouse	Arzu Alpan	Importance of Harvesting to Evaluate Radiation Effects on Concrete Properties
	11:45 – 12:30	DISCUSSION		
12:30 – 2:00		LUNCH		
3	2:00 – 2:10	NRC	Matthew Hiser	Sources of Materials: Past NRC Harvesting and U.S. Decommissioning Plants
	2:10 – 2:35	EPRI	Al Ahluwalia	Harvesting Plans for Materials Aging Degradation Research in Korea and Sweden
	2:35 – 2:50	DOE/ORNL	Tom Rosseel	Materials Harvested by the LWRS Program
	2:50 – 3:00	DOE/INL	John Jackson	NSUF Material Sample Library
	3:00 – 3:15	Energy Solutions	Gerry van Noordennen	Zion Material Harvesting Program
	3:15 – 3:30	Westinghouse	Arzu Alpan	Potential Harvesting of Concrete from Mihama Unit 1
	3:30 – 3:45	BREAK		
	3:45 – 4:00	GRS	Uwe Jendrich	Plants in Decommissioning in Germany
	4:00 – 4:15	CNSC	Daniel Tello	Evaluating Structures, Systems & Components from Decommissioned/Decommissioning Nuclear Facilities in Canada
	4:15 – 5:00	DISCUSSION		



Wednesday, March 8

Session	Time	Organization	Speaker	Presentation Title
4	8:00 – 8:30	EPRI	Jean Smith	Lessons Learned: Harvesting and Shipping of Zorita Materials
	8:30 – 9:00	DOE	Tom Rosseel	LWRS Program: Harvesting Lessons Learned
	9:00 – 9:30	NRC	Matthew Hiser	NRC Perspective on Harvesting Experience and Lessons Learned
	9:30 – 10:00	CRIEPI	Taku Arai	CRIEPI Research Activities with Harvested Materials
	10:00 – 10:15	BREAK		
	10:15 - 10:45	Energy Solutions	Gerry van Noordennen	Zion Harvesting Experience and Lessons Learned
	10:45 - 11:15	Dominion	Bill Zipp	Kewaunee Insights on Material Harvesting
	11:15 – 12:00	DISCUSSION		
12:00 – 1:30		LUNCH		
5	1:30 – 1:45	PNNL (for NRC)	Pradeep Ramuhalli	Technical Information Needed for Informed Harvesting Decisions
	1:45 – 2:30	DISCUSSION		
	2:30 – 3:00	Action Items and Next Steps		
	3:00 – 4:00	EPRI	Sherry Bernhoft	Closing Thoughts
		DOE	Rich Reister	
		NRC	Robert Tregoning	
		ALL		

# Ex-Plant Materials Harvesting Workshop

March 7-8, 2017

USNRC HQ

Rockville, MD, USA

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# Meeting Logistics

- Workshop will be held at NRC's Three White Flint North building
  - Directly adjacent to the White Flint Metro station
  - Nearest hotel within walking distance: Bethesda North Marriott Hotel & Conference Center
- Workshop is a non-public meeting to encourage open discussion
  - Presentations and meeting summary will be distributed among meeting participants only
- GoToMeeting webinar will be available to support additional attendees
  - Webinar attendees will be primarily observers
    - Limited opportunities for webinar attendee participation in discussion if time allows
  - Discussion will be recorded through GoToMeeting software to aid capturing discussion in meeting summary



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# Meeting Logistics

- Presenters, please keep presentations brief and within the allotted time on the agenda
  - Please limit questions following presentations to specific, clarification-type questions
- For broader discussion questions, please save and raise during discussion towards end of each session
- All presentations and meeting summary will be available on Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>

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# Motivation

- With plants shutting down both in the U.S. and internationally, there are increasing opportunities to harvest components from decommissioning plants
  - Past harvesting efforts generally more reactive as opportunities arose, rather than proactively planned
- Ex-plant materials may be valuable because they have been exposed to actual in-service plant operating conditions
  - Can reduce the uncertainty associated with the applicability of the aging conditions
- Insights from research on harvested materials can address technical data needs identified for extended plant operation
- Lessons learned from past harvesting programs can help improve future harvesting efforts
  - Challenges encountered in previous programs can be shared and mitigated or avoided in future programs

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# Approach

- Domestic and international researchers, industry, regulators, and decommissioning companies' discuss benefits and challenges with ex-plant harvesting
  - Encourage sharing of lessons learned as well as areas of common interest
- Workshop consists of topical sessions with short presentations and significant time for open discussion
  - Goal is to maximize engagement among meeting participants
- Scope includes any materials aging issue that could benefit from harvesting, including metals, cables, and concrete



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# Expected Outcome

- Participants become better informed and aware of the benefits and challenges associated with ex-plant harvesting
- Discussions help identify areas of common interest for harvesting to address technical data needs
- Presentations and discussions provide the starting point for a “database” of harvested materials and future harvesting opportunities
- Contacts are made among research organizations to allow for further discussion of specific harvesting projects
- Workshop summary documenting discussion will be distributed among participants

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# Session Expectations

- Session 1 Motivation for Harvesting
  - Perspective from panel participants on their organizations' interest in and motivation for harvesting
  - Brief (5-10 minute) presentation from each panel member followed by general discussion
- Session 2 Technical Data Needs for Harvesting
  - Presenters share high-priority data needs that may be best addressed by harvesting
    - Where does harvesting hold particular value compared to other sources of technical data
  - 15-20 minute presentations followed by open discussion of technical data needs for harvesting

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# Session Expectations

- Session 3 Sources of Materials
  - Information on previously harvested materials and future harvesting opportunities
    - Materials located at research and vendor facilities
    - Decommissioning plants that may allow for future harvesting
  - Short 5-10 minute presentations followed by open discussion
  - Starting point for potential database of previously harvested materials and future harvesting opportunities



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# Session Expectations

- Session 4 Harvesting Experience: Lessons Learned and Practical Aspects
  - Improving future efforts with lessons learned from past programs
    - Pitfalls to avoid and strategies to improve likelihood of success
  - Practical perspective from non-researchers on how harvesting interfaces with the decommissioning process
  - International decommissioning and harvesting experience
  - 20-30 minute presentations followed by open discussion

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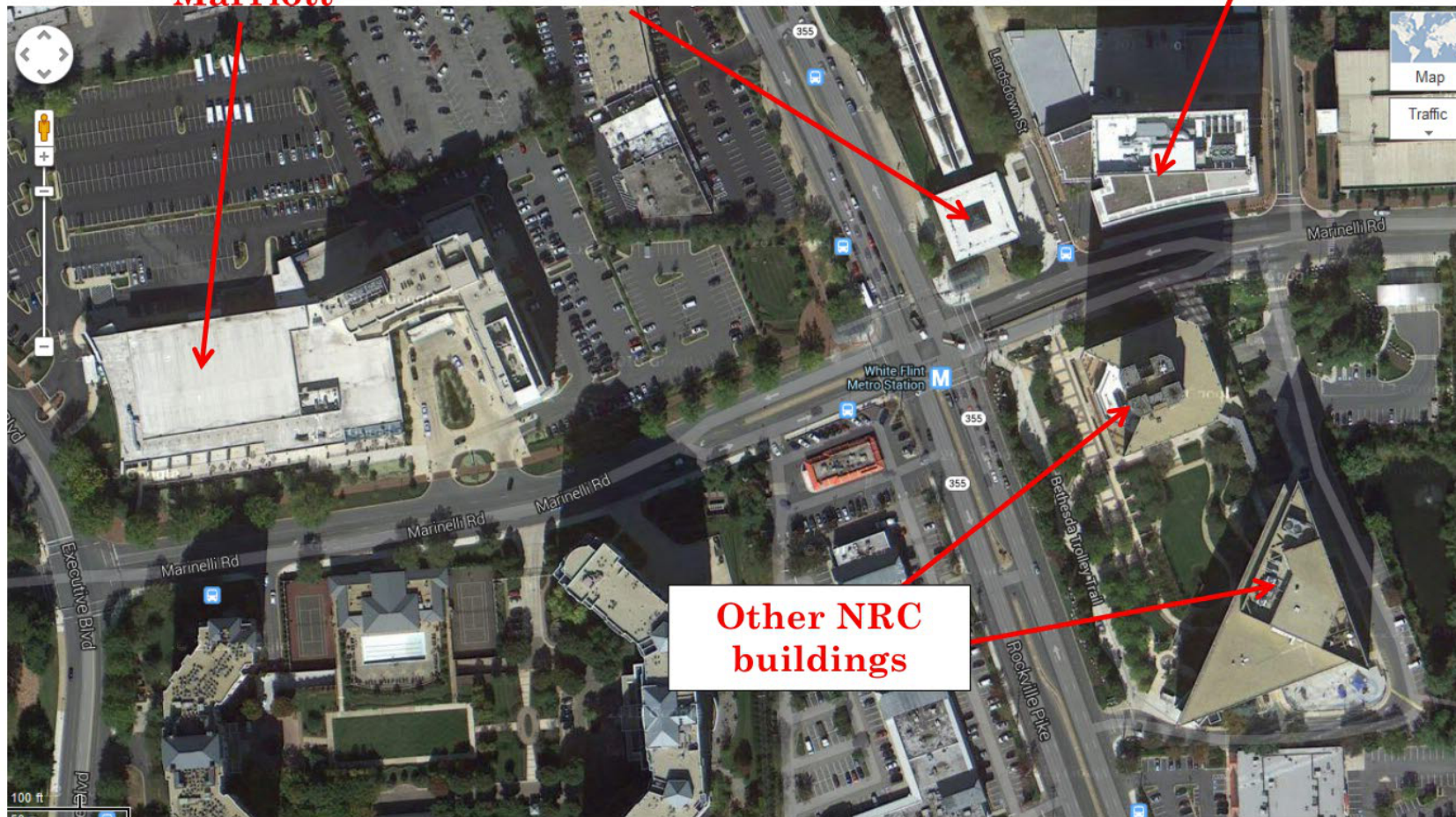
# Session Expectations

- Session 5 Future Harvesting Program Planning
  - Technical and logistical information needed when planning a specific harvesting program
  - Perspective from panel participants on the workshop
  - Next steps and actions from workshop
  - Potential areas of common interest for future harvesting programs
  - Brief (5-10 minute) presentation from each panel member followed by general discussion

**White Flint Metro  
station**

**3WFN**

**Marriott**



**Other NRC  
buildings**



**From:** [Hiser, Matthew](#)  
**To:** ["Chaouadi Rachid"](#)  
**Subject:** RE: RE: RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Friday, March 3, 2017 8:01:49 AM

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Not a problem – thanks and safe travels!

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**From:** Chaouadi Rachid [mailto:[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)]  
**Sent:** Friday, March 03, 2017 8:00 AM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: RE: Ex-plant Materials Harvesting Workshop Presentations  
Thanks Matt. Please consider the attached version and delete the previous (I just received few comments from my co-authors that I included). Sorry for the inconvenience .  
Regards  
Rachid

---

**From:** Hiser, Matthew [mailto:[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)]  
**Sent:** vrijdag 3 maart 2017 13:54  
**To:** Chaouadi Rachid <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>  
**Subject:** RE: RE: Ex-plant Materials Harvesting Workshop Presentations  
Thank you Rachid! The pdf should work fine. Looking forward to the workshop next week!  
Matt

---

**From:** Chaouadi Rachid [mailto:[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)]  
**Sent:** Friday, March 03, 2017 7:26 AM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop Presentations  
Dear Matt  
Please find attached my slides in pdf. If you prefer the pptx version, let me know.  
Hoping to seeing you soon  
Rachid

---

**From:** Hiser, Matthew [mailto:[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)]  
**Sent:** woensdag 1 maart 2017 15:45  
**To:** 'Bernhoft, Sherry' ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean Smith' ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit' <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; Chaouadi Rachid <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>  
**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations  
Dear Presenters:  
Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated agenda.

I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>. I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if you have any questions or suggestions for the workshop.

Thanks!

Matt

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**From:** Hiser, Matthew

**Sent:** Thursday, February 23, 2017 9:07 AM

**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>;

'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, **please provide me with a presentation title**.
2. **Please send me your slides** (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)



**From:** [Alpan, F. Arzu](#)  
**To:** [Hiser, Matthew](#)  
**Cc:** [Tregoning, Robert](#); [Purtscher, Patrick](#)  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Friday, March 3, 2017 10:02:29 AM  
**Attachments:** [Session 2 Alpan WAAP-10336.pdf](#)  
[Session 3 Alpan WAAP-10337.pdf](#)

---

Dear Matt,

Attached, please find my two presentations for the Ex-Plant Materials Harvesting Workshop next week.

Looking forward to the workshop.

Best regards,

Arzu

**Arzu Alpan, Ph.D.**

Principal Engineer

Radiation Engineering & Analysis

Primary Systems Design & Repair

[Products and Services](#)

Westinghouse Electric Company

1000 Westinghouse Drive

Suite 332

Cranberry Township, PA 16066, U.S.A.

Phone: +1 (412) 374-4735

Fax: +1 (724) 940-8565

Email: [alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)

Home Page: [www.westinghousenuclear.com](http://www.westinghousenuclear.com)

Note to requester: Attachments are immediately following.
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**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Sent:** Wednesday, March 01, 2017 9:45 AM

**To:** 'Bernhoft, Sherry (sbernhoft@epri.com)'; 'Dyle, Robin'; 'Jean Smith (jmsmith@epri.com)'; 'Ahluwalia, Kawaljit'; 'Richard Reister (Richard.Reister@nuclear.energy.gov)'; 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; 'Gerard P. Van Noordennen'; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)'; 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; Alpan, F. Arzu; Jackson, John Howard

**Cc:** Tregoning, Robert; Purtscher, Patrick

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

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Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated agenda.

I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive:  
[https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing\[drive.google.com\]](https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing[drive.google.com]).

I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if you have any questions or suggestions for the workshop.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Thursday, February 23, 2017 9:07 AM

**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive: [https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0IOS055QUU?usp=sharing\[drive.google.com\]](https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0IOS055QUU?usp=sharing[drive.google.com])) by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!

Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com)) <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides

provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, **please provide me with a presentation title.**
2. Please send me your slides (either via email or upload to Google Drive: [https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing\[drive.google.com\]](https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing[drive.google.com])) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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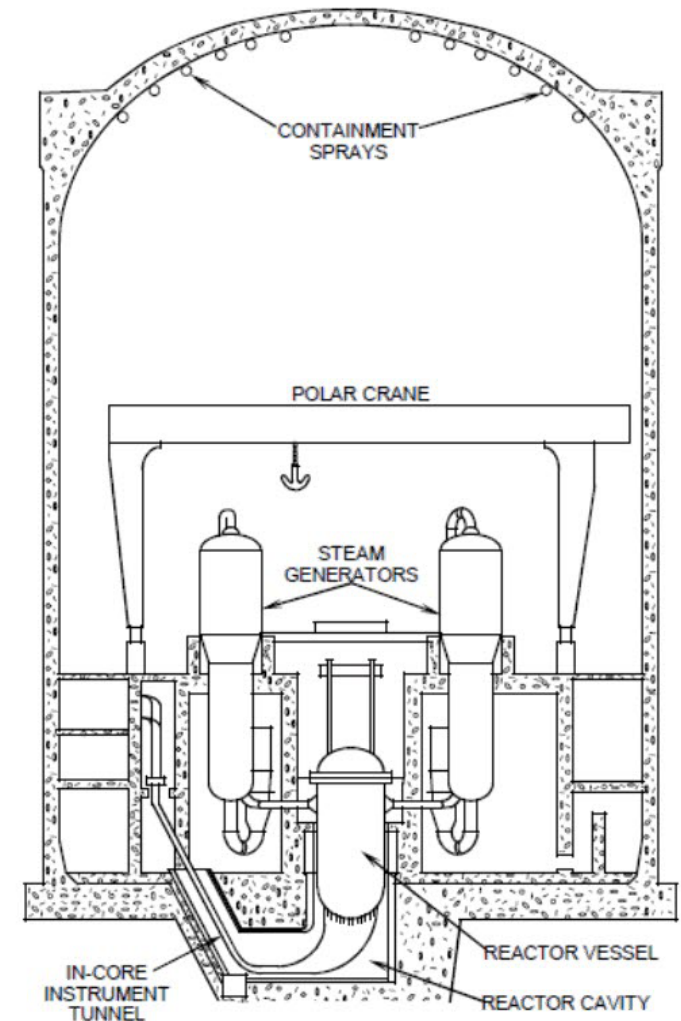


# Importance of Harvesting to Evaluate Radiation Effects on Concrete Properties

Arzu Alpan, Principal Engineer

# Nuclear Power Plant Concrete Structures

- There are various safety-related concrete structures in nuclear power plants (primary containment, containment internal structures, secondary containment/reactor buildings, other structures)
- Near the pressure vessel:
  - Biological shield concrete is placed around the pressure vessel to reduce radiation to allowable levels for humans
  - Some plants use concrete as the pressure vessel support structure



# Radiation Effects on Concrete

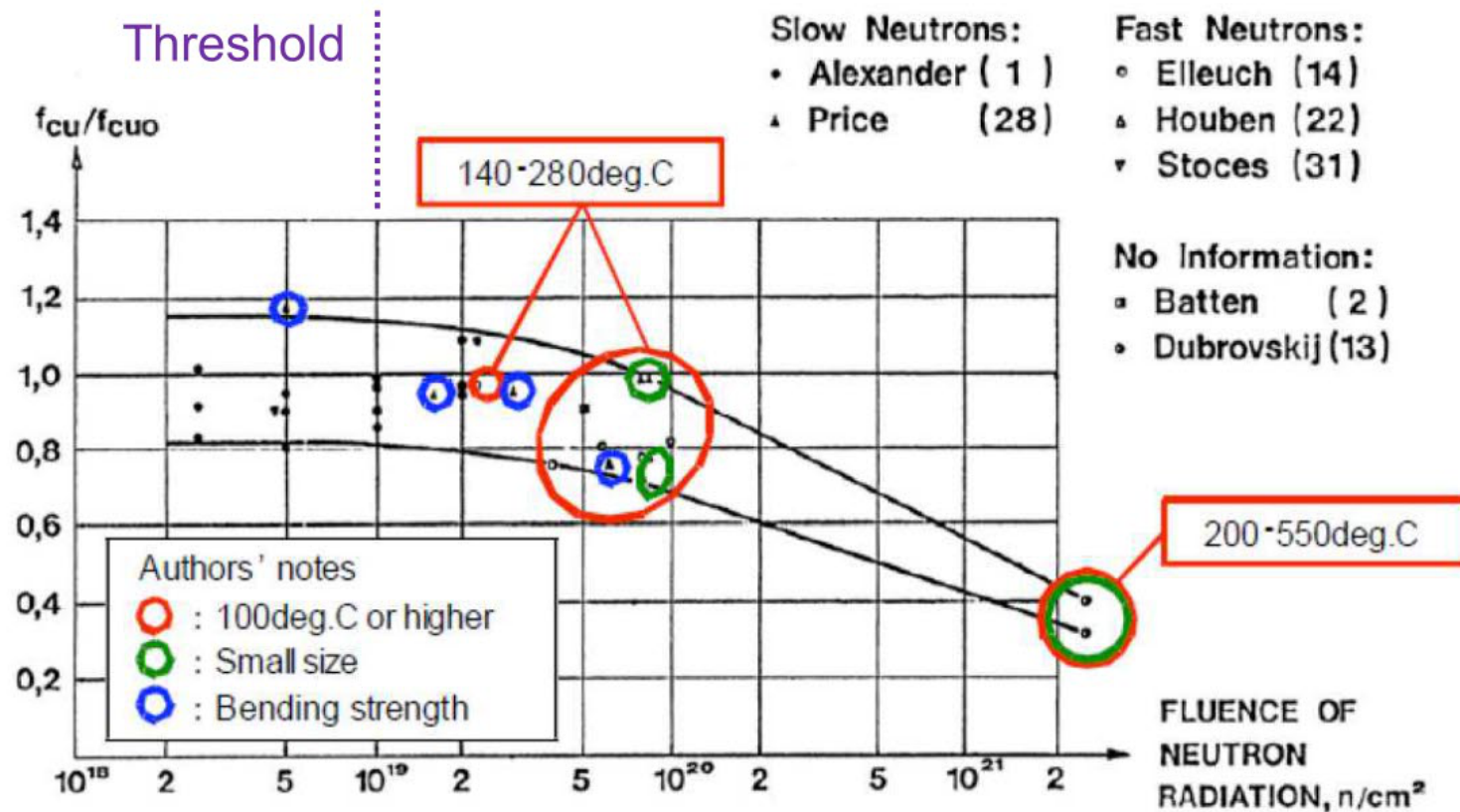
- The radiation types important for the concrete biological shield and reactor vessel support structure are gamma rays and neutrons
- Effects of radiation on concrete for long-term nuclear power plant operation has been of interest to various organizations
- Radiation effects on the properties of concrete depend on the intensity of the radiation field, period of exposure, and concrete composition
- Radiation affects concrete properties such as compressive and tensile strength, modulus of elasticity, creep, volumetric variation



# Radiation Effects on Concrete

- Effects of radiation on concrete has been addressed in various reports; the work by Hilsdorf et al. (1978) is cited frequently:
  - H.K. Hilsdorf, J. Kropp, and H.J. Koch, “The Effects of Nuclear Radiation on the Mechanical Properties of Concrete,” American Concrete Institute Special Publication SP-55, 223-251 (1978)
- The change in compressive strength under neutron radiation exposure was selected for evaluation for this presentation, from the work by Hilsdorf et al. (1978)
- Purpose is to find a threshold radiation level where significant strength reduction will occur

# Compressive Strength of Concrete Exposed to Neutron Radiation - Hilsdorf et al (1978)



NUREG/CR-7171, ORNL/TM-2013/263, "A Review of the Effects of Radiation on Microstructure and Properties of Concretes Used in Nuclear Power Plants," November 2013

# Need for New Data for Irradiated Concrete

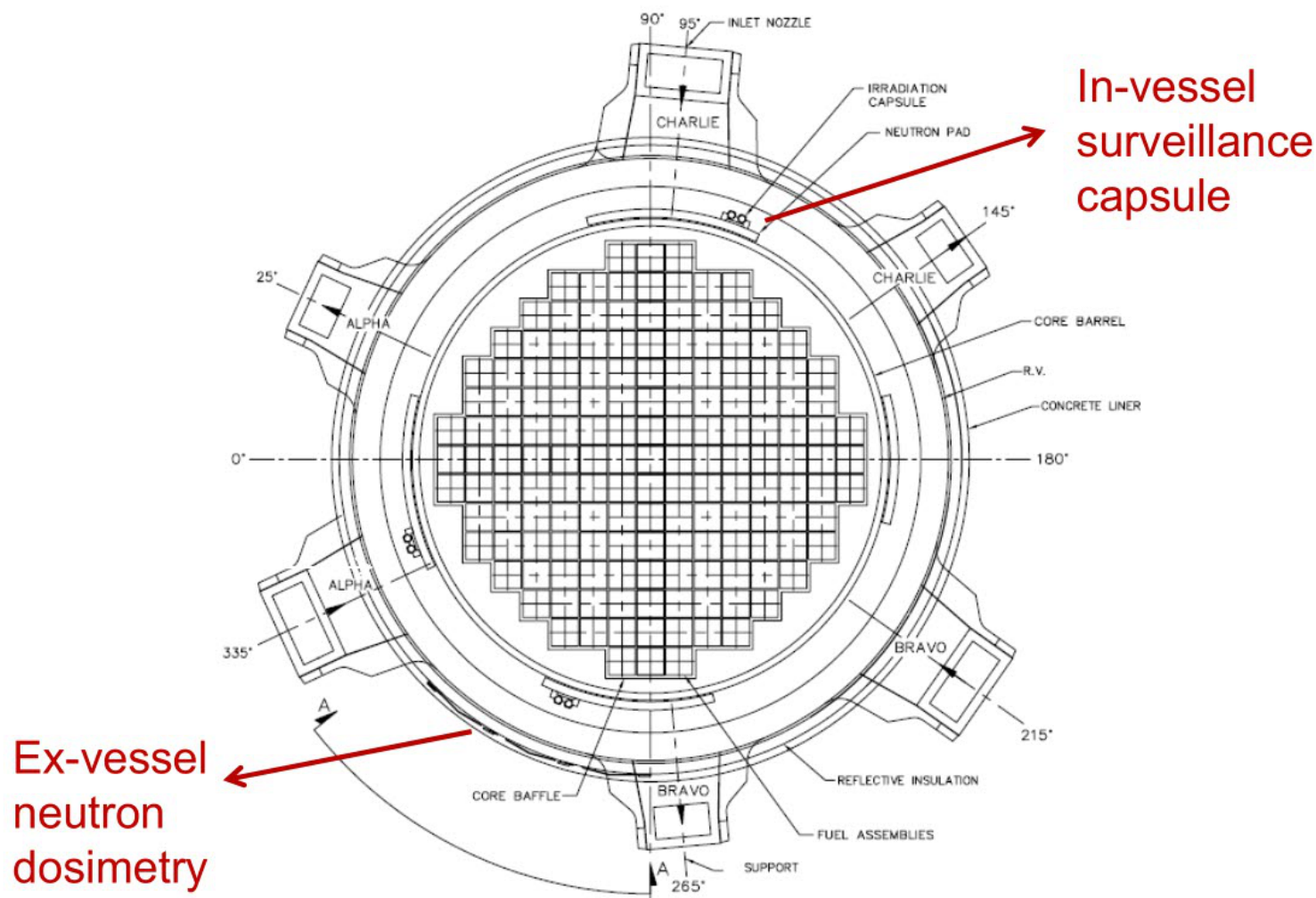
- Data providing information on the effect of radiation on concrete properties are limited and an expansion of the irradiated concrete database is needed
- New data should be representative of conditions associated with nuclear power plants, indicating the need to obtain and test concrete samples from shutdown nuclear power plants
- Furthermore, reliable fluence data from radiation transport calculations is also needed
- Reliable fluence data is achieved by dosimetry measurements
  - Measurement data validates the radiation transport calculational methodology and determines the uncertainty in fluence calculations



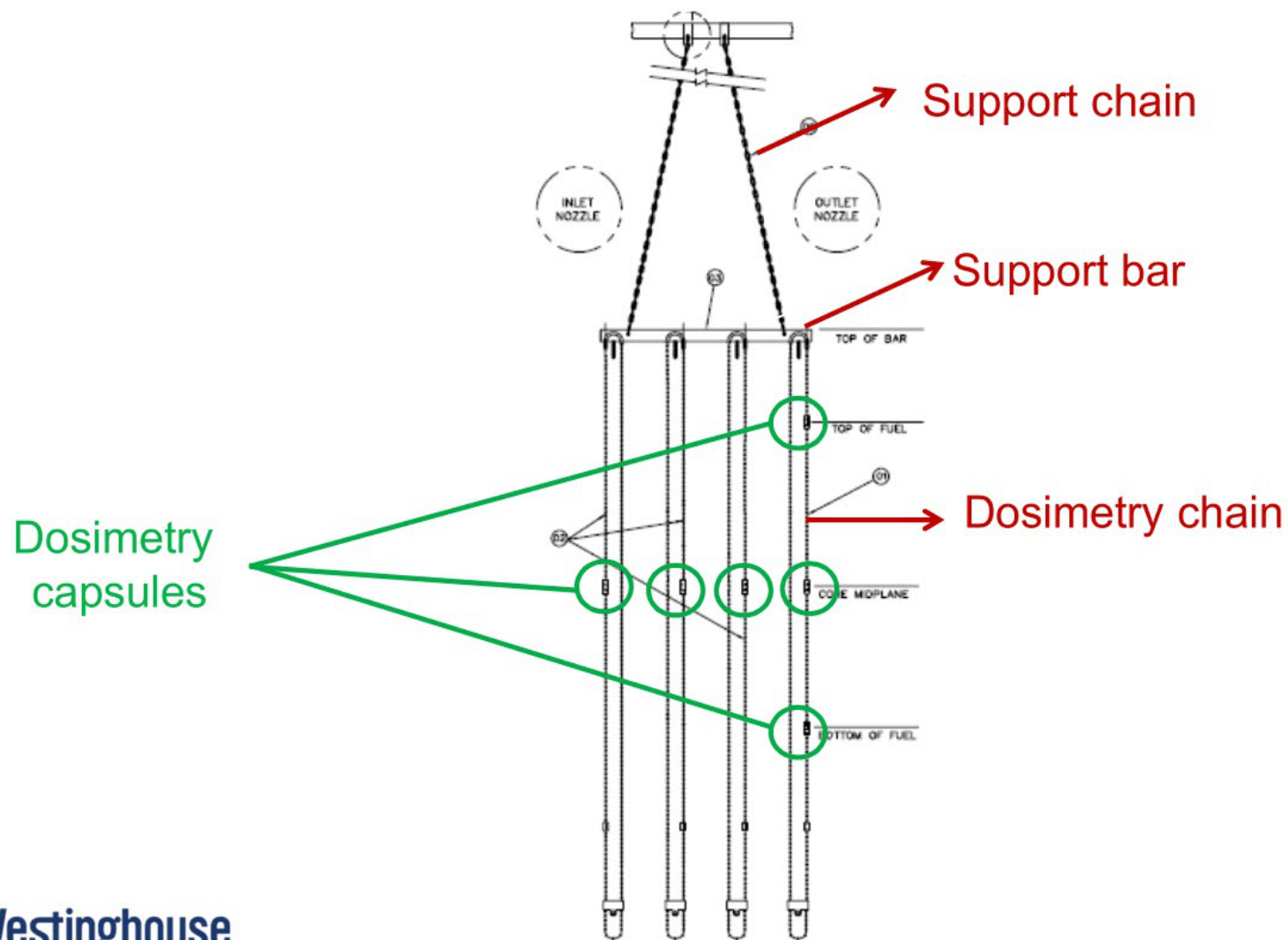
# Neutron Dosimetry for Reactor Pressure Vessel Fluence Calculations

- Reactor pressure vessel fluence calculational methodology validation and uncertainty determination is obtained from:
  - Surveillance capsules
  - Pressure vessel clad sampling
  - Ex-vessel neutron dosimetry (EVND)

# In-Vessel and Ex-Vessel Neutron Dosimetry Plan View



# Ex-Vessel Neutron Dosimetry Section View

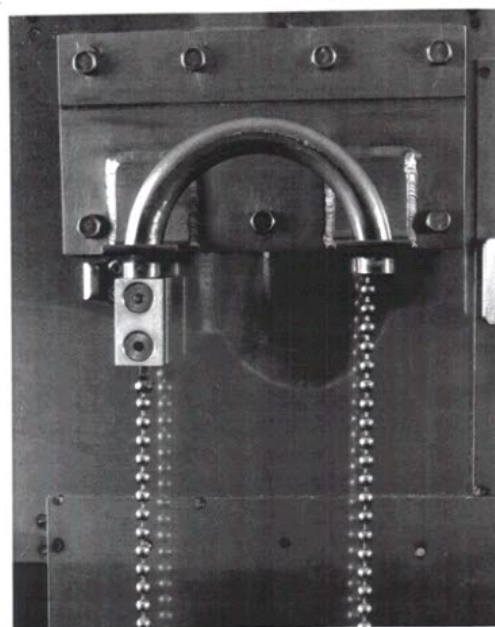




# Ex-Vessel Neutron Dosimetry



Support Bar



U Tube on Support Bar



EVND Capsule

# Ex-Vessel Neutron Dosimetry

Westinghouse has successfully provided ex-vessel neutron dosimetry programs to nuclear plants since 1974, including:

- Almaraz • Asco
- Beaver Valley • Braidwood • Brunswick • Byron
- Callaway • Catawba • Comanche Peak • Connecticut Yankee
- Diablo Canyon
- Farley
- H. B. Robinson
- Kori • Krsko
- McGuire • Mihama
- Palisades • Point Beach
- Ringhals
- South Texas • St. Lucie
- Turkey Point
- Ulchin
- Vogtle • V. C. Summer • Vandelllos
- Wolf Creek
- Yonggwang (Hanbit)
- Zion

# Neutron Dosimetry Measurements for Concrete

- Similar to the pressure vessel fluence analysis, fluence calculations for concrete should utilize measurements for calculational methodology validation and fluence uncertainty determination
- Since EVND is installed at the cavity in front of concrete, it provides dosimetry measurement data useful for concrete fluence calculations



# Conclusions

- Data on irradiation effects on concrete properties are limited; existing data has deficiencies and may be non-representative of the conditions associated with nuclear power plants
- New data is needed to evaluate irradiated concrete degradation; this is best achieved through testing concrete samples obtained from nuclear power plants
- Materials testing data are coupled with fluence data in the evaluation of irradiated concrete degradation

# Conclusions

- Neutron dosimetry measurements should be used in qualifying the fluence calculational methodology and determining the uncertainty in fluence calculations for concrete
  - EVND is appropriate to use for concrete fluence calculations
  - A potential nuclear power plant to harvest concrete that also has neutron dosimetry measurement data will be discussed in Session 3

# Potential Harvesting of Concrete from Mihama Unit 1

Arzu Alpan, Principal Engineer



# Concrete Harvesting / Testing / Fluence Analysis

- Harvesting of concrete from nuclear power plants is needed to understand the mechanisms that cause radiation damage
- Materials testing data is used with exposure data to evaluate irradiated concrete degradation
- It is important to validate the fluence calculations using measurement data

# Mihama Unit 1 Neutron Dosimetry for Concrete

- Westinghouse installed and analyzed neutron dosimetry for one fuel cycle at Mihama Unit 1 at the reactor cavity in front of concrete and away-from-reactor side (back of) concrete
- The dosimetry measurements were used to validate the radiation transport calculations and estimate the water content of concrete at Mihama Unit 1
- Other dosimetry measurement data (e.g. from surveillance capsules) could be used as supplemental data to validate the radiation transport calculations

# Opportunity to Harvest Concrete from Mihama Unit 1

- Mihama Unit 1 was shutdown in 2015
  - Kansai submitted its decommissioning plan to the Nuclear Regulation Authority (NRA)
- Westinghouse is in communication with Kansai to investigate the possibility of extracting cores from the concrete biological shield of Mihama Unit 1



## Collaboration Possibilities

- Westinghouse allocated internal funding to investigate the possibility of harvesting concrete from Mihama Unit 1 and explore feedback from the industry, with the expectation of external funding to complete the project
- We would like your feedback on this possible opportunity and determine if there is an industry interest for this work

**From:** [Hiser, Matthew](#)  
**To:** [Amberge, Kyle](#)  
**Subject:** RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop  
**Date:** Monday, March 6, 2017 2:57:00 PM

---

Hi Kyle,  
Here you go: <https://attendee.gotowebinar.com/register/6076202901971284226>  
Feel free to share with others!  
Thanks!  
Matt

**Matthew Hiser**

Materials Engineer  
US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research  
Division of Engineering | Corrosion and Metallurgy Branch  
Phone: 301-415-2454 | Office: TWFN 10D62  
[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Amberge, Kyle [mailto:kamberge@epri.com]  
**Sent:** Monday, March 06, 2017 2:47 PM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop  
Matt,  
Please let me know the information associated with this Webcast for this meeting.  
Thank you.

*Kyle J. Amberge*

**Electric Power Research Institute**

**Nuclear-Materials Reliability Program**  
1300 West WT Harris Blvd. | Charlotte, NC 28262  
704-595-2039 (office)  
Email: [kamberge@epri.com](mailto:kamberge@epri.com)  
[www.epri.com](http://www.epri.com)

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---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Friday, March 3, 2017 7:22 AM  
**To:** Bernhoft, Sherry <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' (<[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' (<[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; 'Roussel Guy'

<[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; 'John.Wagner@inl.gov' <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>; 'Riccardella, Pete' <[Priccardella@Structint.com](mailto:Priccardella@Structint.com)>; 'RICHTER, Mark' <[mar@nei.org](mailto:mar@nei.org)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building.

The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Tregoning, Robert](#)  
**To:** [Hiser, Matthew](#); [Purtscher, Patrick](#)  
**Cc:** [Frankl, Istvan](#); [Sangimino, Donna-Marie](#); [Mehta, Shivani](#)  
**Subject:** FW: Ex Plant Harvesting Workshop  
**Date:** Monday, March 6, 2017 11:17:30 AM

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All:

See below; we obviously will need to build this into the agenda so I will shorten my remarks accordingly. On a related note, the Belgians will be providing a short note to the head of the Belgium regulator, FANC, about the meeting. We need to provide something similar as well as an EDO note, especially since he's coming to the RIC next week and I believe he will be meeting with upper management.

Cheers,

Rob

Robert Tregoning

Technical Advisor for Materials

US Nuclear Regulatory Commission

Two White Flint North, M/S T-10 A36

11545 Rockville Pike

Rockville, MD 20852-2738

ph: 301-415-2324

fax: 301-415-6671

---

**From:** Thomas, Brian

**Sent:** Monday, March 06, 2017 9:37 AM

**To:** Weber, Michael <Michael.Weber@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>

**Cc:** Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>

**Subject:** Ex Plant Harvesting Workshop

Mike, Anne,

The subject workshop starts at 8:00am in 3WFN-01C03. I will forward some bullets to help with your opening remarks. Note that it is the first kickoff of the topic/concept thus it will be a working level meeting.

Thx- Brian

**Brian**

Brian E. Thomas, Director

Division of Engineering

Office of Nuclear Regulatory Research

U S Nuclear Regulatory Commission

**From:** [Obodoako, Aloysius](#)  
**To:** [Ramuhalli, Pradeep](#)  
**Cc:** [Hiser, Matthew](#)  
**Subject:** NRC-HQ-60-15-T-0023 "Strategic Approach for Obtaining Material and Components Aging Information"  
**Date:** Monday, March 7, 2016 8:41:35 AM

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Good morning Pradeep,

During our last meeting we agreed to meet sometime this week to go over the demo for this project. We will have to reschedule this meeting to sometime next week because the NRC is hosting the Regulatory Information Conference (RIC) this week on site, which I forgot. Please send me dates that you can support having a meeting for next week.

**Aloysius Obodoako, P.E.**

Materials Engineer

U.S. Nuclear Regulatory Commission

RES/DE/CMB

Office location: TWFN-10B31

Office phone: (301)-415-2889

Email: [Aloysius.Obodoako@nrc.gov](mailto:Aloysius.Obodoako@nrc.gov)

---

**From:** Ramuhalli, Pradeep [<mailto:Pradeep.Ramuhalli@pnnl.gov>]

**Sent:** Friday, February 26, 2016 3:44 PM

**To:** Obodoako, Aloysius <[Aloysius.Obodoako@nrc.gov](mailto:Aloysius.Obodoako@nrc.gov)>; Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Cc:** Hull, Amy <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>; Knobbs, Katie <[katie.knobbs@pnnl.gov](mailto:katie.knobbs@pnnl.gov)>

**Subject:** [External\_Sender] RE: RRIM Project Updates

Aloysius, Matt:

It was good talking with both of you today. I am attaching the draft version of the SLR Gall production tool that Amy had provided back in October of last year. We are working to pull in info from this tool and map it back to EMDA, etc. for prioritizing harvesting info. The production tool appears to provide a compact representation of the info in the GALL report drafts. If there is a more recent version of this tool, it would help us in improving our ability to map across data sets in the prioritization process.

Thanks!

With best regards,

Pradeep Ramuhalli, PhD

Pacific Northwest National Laboratory

509-375-2763

[pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

---

**From:** Obodoako, Aloysius [<mailto:Aloysius.Obodoako@nrc.gov>]

**Sent:** Friday, February 26, 2016 11:32 AM

**To:** Ramuhalli, Pradeep

**Subject:** RE: RRIM Project Updates

Hello Pradeep, I can't seem to join the teleconference. The Lync link doesn't work and the pin you provided does not match the telecon number your provided.

-----Original Appointment-----

**From:** Ramuhalli, Pradeep [<mailto:Pradeep.Ramuhalli@pnnl.gov>]

**Sent:** Thursday, February 18, 2016 7:32 PM

**To:** Ramuhalli, Pradeep; Knobbs, Katie; Hiser, Matthew; Hull, Amy; Obodoako, Aloysius

**Subject:** [External\_Sender] RRIM Project Updates

**When:** Friday, February 26, 2016 11:30 AM-12:30 PM (UTC-08:00) Pacific Time (US & Canada).

**Where:** Call-in number below

Matt:

Would this work? If not, we can do this from 8-9 PST Friday (11-noon). Unfortunately, Tuesday morning is a mess for me right now.

.....

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[Find a local number](#)

Conference ID:  (b)(6)

[Forgot your dial-in PIN?](#) [Help](#)

[!OC([1033])!]

---



**From:** [Amberge, Kyle](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] Harvesting Webcast  
**Date:** Tuesday, March 7, 2017 11:34:20 AM

---

Matt, are all phone callers muted? Seems like there is lots of background noise?  
or maybe it's someone in the room at a table near a microphone is sliding paper around and tapping table, drowning out the speaker on the webcast?

Just a question! Thanks – KA

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**From:** [Yi-Ming Pan](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] RE: RE: Announcement of Ex-Plant Materials Harvesting Workshop  
**Date:** Tuesday, March 7, 2017 5:49:54 PM

---

Thank you, Matt.

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Tuesday, March 07, 2017 4:37 PM  
**To:** Yi-Ming Pan  
**Subject:** RE: RE: Announcement of Ex-Plant Materials Harvesting Workshop  
Hi Yi-Ming,

The presentations can be found at this link:

<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>

Thanks!

Matt

**Matthew Hiser**

Materials Engineer  
US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research  
Division of Engineering | Corrosion and Metallurgy Branch  
Phone: 301-415-2454 | Office: TWFN 10D62  
[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Yi-Ming Pan [mailto:[ypan@swri.org](mailto:ypan@swri.org)]  
**Sent:** Monday, March 06, 2017 3:27 PM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: Announcement of Ex-Plant Materials Harvesting Workshop  
Matt,

Greg forwarded me the subject workshop information. I plan to join the webinar and would appreciate if you can send me the presentations for the workshop.

Thanks,

Yiming

Yi-Ming Pan, Ph.D.

Staff Engineer

CNWRA

Southwest Research Institute

San Antonio, TX 78238-5166

Phone: 210-522-6640

Email: [ypan@swri.org](mailto:ypan@swri.org)

---

**From:** Oberson, Greg [mailto:[Greg.Oberson@nrc.gov](mailto:Greg.Oberson@nrc.gov)]  
**Sent:** Friday, March 03, 2017 10:42 AM  
**To:** Pan, Yi-Ming  
**Subject:** FW: Announcement of Ex-Plant Materials Harvesting Workshop  
Dear Colleagues:

RES is hosting a workshop on ex-plant materials harvesting at NRC headquarters on March 7-8, 2017. The scope includes metallic, electrical, and concrete materials or components that could benefit from harvesting. I have attached the draft agenda and workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations.

This workshop includes about two dozen external participants, including representatives from DOE and EPRI as well as international organizations from Japan, Europe, and Canada.

A webinar will be available to allow NRC staff to observe and participate in the workshop:

<https://attendee.gotowebinar.com/register/6076202901971284226> .

If you have any questions or need additional information about the workshop, please contact myself or Matt Hiser on my staff.

Thanks,

Steve



**From:** [Hiser, Matthew](#)  
**To:** [新井 拓](#)  
**Subject:** RE: Re: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Tuesday, March 7, 2017 6:53:00 AM

---

Dear Taku,

OK, I see them there. Thank you!

Matt

-----Original Message-----

From: 新井 拓 [<mailto:arait@criepi.denken.or.jp>]  
Sent: Monday, March 06, 2017 11:03 PM  
To: Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
Cc: 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>  
Subject: [External\_Sender] Re: Ex-plant Materials Harvesting Workshop Presentations

Dear Matt

I uploaded my presentation files before I left JAPAN.

If upload failed, I will upload again.

Best regards

Taku

"Hiser, Matthew" <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>さんは書きました:

> Dr. Arai:

>

> I hope you have safe travels to the workshop tomorrow!

>

> I wanted to follow up from last week's email to see if you can provide your slides for the workshop via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>.

>

> Please let me know if you have any questions. I look forward to meeting you tomorrow at the workshop!

>

> Matt

>

> Matthew Hiser

> Materials Engineer

> US Nuclear Regulatory Commission | Office of Nuclear Regulatory

> Research Division of Engineering | Corrosion and Metallurgy Branch

> Phone: 301-415-2454 | Office: TWFN 10D62

> [Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov) <<mailto:Matthew.Hiser@nrc.gov>>

>

> From: Hiser, Matthew

> Sent: Wednesday, March 01, 2017 9:45 AM

> To: 'Bernhoft, Sherry ([sbernhoft@epri.com](mailto:sbernhoft@epri.com))' <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>;

> 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com))'

> <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit' <[kahluwal@epri.com](mailto:kahluwal@epri.com)>;

> 'Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov))'

> <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov'

> <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>;

> 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P.  
> Van Noordennen' <gpvan Noordennen@energysolutions.com>; 'Ramuhalli,  
> Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <Pradeep.Ramuhalli@pnnl.gov>;  
> 'daniel.tello@canada.ca' <daniel.tello@canada.ca>;  
> 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>;  
> 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>;  
> 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>;  
> 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; Jackson, John  
> Howard <john.jackson@inl.gov>  
> Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick  
> <Patrick.Purtscher@nrc.gov>  
> Subject: RE: Ex-plant Materials Harvesting Workshop Presentations  
>  
> Dear Presenters:  
>  
> Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated  
agenda.  
>  
> I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of  
today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the  
computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in  
advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnPZZ0JOS055QUU?usp=sharing>.  
>  
> I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if  
you have any questions or suggestions for the workshop.  
>  
> Thanks!  
> Matt  
>  
> From: Hiser, Matthew  
> Sent: Thursday, February 23, 2017 9:07 AM  
> To: Bernhoft, Sherry (sbernhof@epri.com<<mailto:sbernhof@epri.com>>)  
<sbernhof@epri.com<<mailto:sbernhof@epri.com>>>; Dyle, Robin <rdyle@epri.com<<mailto:rdyle@epri.com>>>;  
Jean Smith (jmsmith@epri.com<<mailto:jmsmith@epri.com>>) <jmsmith@epri.com<<mailto:jmsmith@epri.com>>>;  
Ahluwalia, Kawaljit <kahluwal@epri.com<<mailto:kahluwal@epri.com>>>; Richard Reister  
(Richard.Reister@nuclear.energy.gov<<mailto:Richard.Reister@nuclear.energy.gov>>)  
<Richard.Reister@nuclear.energy.gov<<mailto:Richard.Reister@nuclear.energy.gov>>>; 'leonardk@ornl.gov'  
<leonardk@ornl.gov<<mailto:leonardk@ornl.gov>>>; 'Rosseel, Thomas M.'  
<rosseeltm@ornl.gov<<mailto:rosseeltm@ornl.gov>>>; 'William F Zipp (Generation - 4)'  
<william.f.zipp@dom.com<<mailto:william.f.zipp@dom.com>>>; 'Gerard P. Van Noordennen'  
<gpvan Noordennen@energysolutions.com<<mailto:gpvan Noordennen@energysolutions.com>>>; Ramuhalli, Pradeep  
(Pradeep.Ramuhalli@pnnl.gov<<mailto:Pradeep.Ramuhalli@pnnl.gov>>)  
<Pradeep.Ramuhalli@pnnl.gov<<mailto:Pradeep.Ramuhalli@pnnl.gov>>>  
i@pnnl.gov  
v>>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca<<mailto:daniel.tello@canada.ca>>>; 'Uwe.Jendrich@grs.de'  
<Uwe.Jendrich@grs.de<<mailto:Uwe.Jendrich@grs.de>>>; 'rachid.chaouadi@sckcen.be'  
<rachid.chaouadi@sckcen.be<<mailto:rachid.chaouadi@sckcen.be>>>; 'arait@criepi.denken.or.jp'  
<arait@criepi.denken.or.jp<<mailto:arait@criepi.denken.or.jp>>>; 'alpanfa@westinghouse.com'  
<alpanfa@westinghouse.com<<mailto:alpanfa@westinghouse.com>>>; Jackson, John Howard  
<john.jackson@inl.gov<<mailto:john.jackson@inl.gov>>>;  
desire.ndomba@canada.ca<<mailto:desire.ndomba@canada.ca>>  
> Cc: Tregoning, Robert  
> <Robert.Tregoning@nrc.gov<<mailto:Robert.Tregoning@nrc.gov>>>;  
> Purtscher, Patrick  
> <Patrick.Purtscher@nrc.gov<<mailto:Patrick.Purtscher@nrc.gov>>>  
> Subject: RE: Ex-plant Materials Harvesting Workshop Presentations

>

> Dear Presenters:

>

> Friendly reminders:

>

> \* Please provide presentation title by February 28.

>

> \* Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by March 3.

>

>

> I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

>

> Thanks!

> Matt

>

>

> From: Hiser, Matthew

> Sent: Wednesday, February 15, 2017 10:47 AM

> To: Bernhoft, Sherry (sbernhof@epri.com<<mailto:sbernhof@epri.com>>);  
 <sbernhof@epri.com<<mailto:sbernhof@epri.com>>>; Dyle, Robin <rdyle@epri.com<<mailto:rdyle@epri.com>>>;  
 Jean Smith (jmsmith@epri.com<<mailto:jmsmith@epri.com>>) <jmsmith@epri.com<<mailto:jmsmith@epri.com>>>;  
 Ahluwalia, Kawaljit <kahluwal@epri.com<<mailto:kahluwal@epri.com>>>; Richard Reister  
 (Richard.Reister@nuclear.energy.gov<<mailto:Richard.Reister@nuclear.energy.gov>>)  
 <Richard.Reister@nuclear.energy.gov<<mailto:Richard.Reister@nuclear.energy.gov>>>; 'leonardk@ornl.gov'  
 <leonardk@ornl.gov<<mailto:leonardk@ornl.gov>>>; 'Rosseel, Thomas M.'  
 <rosseeltm@ornl.gov<<mailto:rosseeltm@ornl.gov>>>; 'William F Zipp (Generation - 4)'  
 <william.f.zipp@dom.com<<mailto:william.f.zipp@dom.com>>>; 'Gerard P. Van Noordennen'  
 <gpvan Noordennen@energysolutions.com<<mailto:gpvan Noordennen@energysolutions.com>>>; Ramuhalli, Pradeep  
 (Pradeep.Ramuhalli@pnnl.gov<<mailto:Pradeep.Ramuhalli@pnnl.gov>>)  
 <Pradeep.Ramuhalli@pnnl.gov<<mailto:Pradeep.Ramuhalli@pnnl.gov>>>  
 i@pnnl.gov  
 v>>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca<<mailto:daniel.tello@canada.ca>>>; 'Uwe.Jendrich@grs.de'  
 <Uwe.Jendrich@grs.de<<mailto:Uwe.Jendrich@grs.de>>>; 'rachid.chaouadi@sckcen.be'  
 <rachid.chaouadi@sckcen.be<<mailto:rachid.chaouadi@sckcen.be>>>; 'arait@criepi.denken.or.jp'  
 <arait@criepi.denken.or.jp<<mailto:arait@criepi.denken.or.jp>>>; 'alpanfa@westinghouse.com'  
 <alpanfa@westinghouse.com<<mailto:alpanfa@westinghouse.com>>>>

> Cc: Tregoning, Robert

> <Robert.Tregoning@nrc.gov<<mailto:Robert.Tregoning@nrc.gov>>>;

> Purtscher, Patrick

> <Patrick.Purtscher@nrc.gov<<mailto:Patrick.Purtscher@nrc.gov>>>

> Subject: Ex-plant Materials Harvesting Workshop Presentations

>

> Dear Harvesting Workshop Presenters:

>

> If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

>

> There are two actions I request from presenters:

>

> 1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, please provide me with a presentation title.



>

> 2. Please send me your slides (either via email or upload to Google Drive:

<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0IOS055QUU?usp=sharing>) by the end of February if possible.

>

> Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

>

> Thanks!

> Matt

>

> Matthew Hiser

> Materials Engineer

> US Nuclear Regulatory Commission | Office of Nuclear Regulatory

> Research Division of Engineering | Corrosion and Metallurgy Branch

> Phone: 301-415-2454 | Office: TWFN 10D62

> Matthew.Hiser@nrc.gov<<mailto:Matthew.Hiser@nrc.gov>>

>

>

**From:** [Hiser, Matthew](#)  
**To:** ["Smith, Jean"](#)  
**Subject:** RE: RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
**Date:** Thursday, March 9, 2017 8:20:11 AM

---

Hi Jean,

The other thing I was thinking about yesterday is the plan for you and Anders to meet with us at NRC HQ on March 23. Is that still the plan?

Thanks!

Matt

---

**From:** Smith, Jean [mailto:jmsmith@epri.com]  
**Sent:** Friday, March 03, 2017 9:02 AM  
**To:** Hiser, Matthew <Matthew.Hiser@nrc.gov>  
**Subject:** [External\_Sender] RE: [External] RE: Ex-plant Materials Harvesting Workshop Presentations  
Matt,

Please note the minor change to the title. I've included some information on the cable harvesting from Crystal River.

Thanks,

Jean

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** Wednesday, March 1, 2017 8:45 AM  
**To:** Bernhoft, Sherry <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Smith, Jean <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' (<[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)> <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' (<[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)> <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>  
**Subject:** [External] RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Thank you for sending presentation titles. I have all but a couple at this point and have attached the updated agenda.

I know many of you are working on finalizing your slides for the workshop (I already have 2 submitted as of today!). Please provide slides by Friday if at all possible. It will be very challenging to load presentations onto the computer via thumb drive the day of the workshop due to NRC computer security restrictions, so sending them in advance is greatly preferred. Again, best options for sending are either email or upload to Google Drive:

<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>.

I am looking forward to a productive workshop next week and appreciate your participation. Please let me know if you have any questions or suggestions for the workshop.

Thanks!  
Matt

---

**From:** Hiser, Matthew

**Sent:** Thursday, February 23, 2017 9:07 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; [desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop Presentations

Dear Presenters:

Friendly reminders:

- Please provide presentation title by February 28.
- Please send me your slides (either via email or upload to Google Drive:  
<https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>)  
by March 3.

I have attached the workshop agenda to this email. Please let me know if you have any questions or corrections.

Thanks!  
Matt

---

**From:** Hiser, Matthew

**Sent:** Wednesday, February 15, 2017 10:47 AM

**To:** Bernhoft, Sherry ([sbernhof@epri.com](mailto:sbernhof@epri.com)) <[sbernhof@epri.com](mailto:sbernhof@epri.com)>; Dyle, Robin <[rdyle@epri.com](mailto:rdyle@epri.com)>; Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com)) <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; Ahluwalia, Kawaljit <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)) <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)) <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Subject:** Ex-plant Materials Harvesting Workshop Presentations

Dear Harvesting Workshop Presenters:

If you are receiving this email, then I have you down on the agenda to present at the upcoming Ex-plant Materials Harvesting Workshop on March 7-8. I have attached the workshop introduction slides that have been shared with most, if not all, of you. These



slides cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. Please take a look at these slides and try to tailor your presentation to the focus and length of the respective session.

There are two actions I request from presenters:

1. I have attached the confirmed list of speakers in an Excel document. Please take a look at this list to confirm you are presenting in the session you expected and if I have made any mistakes in the list of speakers. If you have not already done so, **please provide me with a presentation title.**
2. **Please send me your slides** (either via email or upload to Google Drive: <https://drive.google.com/drive/folders/0B5DWMLch5YSXcnpZZ0JOS055QUU?usp=sharing>) by the end of February if possible.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Bernhoft, Sherry](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] Re: [External] RE: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 10, 2017 8:14:07 AM

---

Thanks and I am fine with sharing my presentation

Sherry

Sent from my iPad

On Mar 10, 2017, at 7:02 AM, Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)> wrote:

Dear Workshop Participants:

Thank you for attending and participating in the workshop this week. I appreciate your active participation in what was a very interesting and informative discussion. I hope you were able to come away from the meeting with a better understanding of how to approach harvesting and what to expect in terms of cost, schedule, complexity, challenges, etc.

NRC will be developing a workshop summary report to be shared among meeting participants. We have also placed all of the presentations into a Google Drive folder for sharing among meeting participants (<https://drive.google.com/open?id=0B5DWMLch5YSXcnpZ70JOS055QUU>).

I have laid out the action items and planned next steps to address each item below:

- <!--[if !supportLists]-->1. <!--[endif]-->Sharing workshop slides (Ahluwalia)
  - <!--[if !supportLists]-->a. <!--[endif]-->**Next step:** Presenters, please reply to this email if you have any concerns with meeting participants sharing your slides with colleagues or other organizations. If I don't hear from you, we'll assume you're OK with sharing.
- <!--[if !supportLists]-->2. <!--[endif]-->MRP-320 (Product ID: 1022866) on harvesting from MRP-227 inspections
  - <!--[if !supportLists]-->a. <!--[endif]-->Available to public for fee
- <!--[if !supportLists]-->3. <!--[endif]-->Cable surveillance programs in Germany
  - <!--[if !supportLists]-->a. <!--[endif]-->**Next step:** GRS (Jendrich) to inquire with cable colleagues and share
- <!--[if !supportLists]-->4. <!--[endif]-->Sources of Materials database
  - <!--[if !supportLists]-->a. <!--[endif]-->**Next step:** Opportunities presented in this meeting to be documented in workshop summary.
  - <!--[if !supportLists]-->b. <!--[endif]-->**Next step:** AECL, CNSC, NRC, PNNL, INL NSUF interested in database development. Any other parties interested?
- <!--[if !supportLists]-->5. <!--[endif]-->Prioritized data needs
  - <!--[if !supportLists]-->a. <!--[endif]-->**Next step:** Smaller group meetings to prioritize data needs of interest
- <!--[if !supportLists]-->i. <!--[endif]-->Material / component of interest, purpose, intended outcome

Note to requester: This email record is as it was provided to the FOIA team by RES staff, including the "coding" language in M. Hiser's email.



<!--[if !supportLists]-->b. <!--[endif]-->Idea: survey of participants at  
Environmental Degradation conference  
<!--[if !supportLists]-->6. <!--[endif]-->EPRI report on SFP liner boric acid transport  
through concrete  
<!--[if !supportLists]-->a. <!--[endif]-->NRC (Sircar) to contact EPRI if needed  
<!--[if !supportLists]-->7. <!--[endif]-->Harvested Materials Research Results  
<!--[if !supportLists]-->a. <!--[endif]-->**Next step:** A section of the workshop  
summary report to cover references from previous harvested materials  
research  
<!--[if !supportLists]-->b. <!--[endif]-->Use references from EMDA as  
starting point  
<!--[if !supportLists]-->c. <!--[endif]-->**Next step:** Please send any  
references to harvested materials research that should be included and  
its outcome to Matt Hiser.

Please feel free to contact me with any questions or suggestions for documenting the  
workshop and the next steps moving forward.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew

**Sent:** Friday, March 03, 2017 8:22 AM

**To:** 'Bernhoft, Sherry' <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean  
Smith' ([jmsmith@epri.com](mailto:jmsmith@epri.com))' <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit'  
<[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov))'  
<[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>;  
'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)'  
<[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen'  
<[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep'  
([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov))' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>;  
'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de'  
<[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>;  
'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com'  
<[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>;  
'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuyinh@aecl.ca'  
<[khuyinh@aecl.ca](mailto:khuyinh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>;  
'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>;  
'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; Jackson, John Howard  
<[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; 'Roussel Guy' <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; 'john.wagner@inl.gov'  
<[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>; 'Riccardella, Pete' <[Priccardella@Structint.com](mailto:Priccardella@Structint.com)>; 'RICHTER,  
Mark' <[mar@nei.org](mailto:mar@nei.org)>



**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

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If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** [Hiser, Matthew](#)  
**To:** ["Gerard P. Van Noordennen"](#)  
**Subject:** RE: RE: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 10, 2017 7:54:39 AM

---

Hi Gerry,

Thanks for participating and we'll be in touch regarding future opportunities, starting at SONGS!

Thanks!

Matt

---

**From:** Gerard P. Van Noordennen [<mailto:gpvannoordennen@energysolutions.com>]

**Sent:** Friday, March 10, 2017 7:17 AM

**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop

Matt,

Great workshop. Thanks for inviting me. *EnergySolutions* has no concerns in sharing my slides.

Gerry van Noordennen

Vice President Regulatory Affairs

*EnergySolutions*

151 Lafayette Drive, Suite 201

Oak Ridge, TN 37830

Office: 865-481-6319

Cell: (b)(6)

*ZionSolutions*

101 Shiloh Boulevard

Zion, IL 60099

Office: 224-789-4025

[gpvan Noordennen@energysolutions.com](mailto:gpvan Noordennen@energysolutions.com)

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]

**Sent:** Friday, March 10, 2017 7:03 AM

**To:** 'Bernhoft, Sherry'; 'Dyle, Robin'; 'Jean Smith ([jmsmith@epri.com](mailto:jmsmith@epri.com))'; 'Ahluwalia, Kawaljit'; 'Richard Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov))'; 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; Gerard P. Van Noordennen; 'Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnsl.gov](mailto:Pradeep.Ramuhalli@pnsl.gov))'; 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; 'sokolovm@ornl.gov'; 'desire.ndomba@canada.ca'; 'khuynh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; 'Jackson, John Howard'; 'Roussel Guy'; 'john.wagner@inl.gov'; 'Riccardella, Pete'; 'RICHTER, Mark'; 'Amberge, Kyle'; 'Hull, Amy'; 'Moyer, Carol'; 'Oberson, Greg'; 'Audrain, Margaret'; 'Poehler, Jeffrey'; 'Hiser, Allen'; 'Yoo, Mark'; 'Koshy, Thomas'; 'Buford, Angela'; 'Sircar, Madhumita

**Cc:** Tregoning, Robert; Purtscher, Patrick; Frankl, Istvan

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Workshop Participants:

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I have laid out the action items and planned next steps to address each item below:

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  - a. **Next step:** Presenters, please reply to this email if you have any concerns with meeting participants sharing your slides with colleagues or other organizations. If I don't hear from you, we'll assume you're OK with sharing.
2. MRP-320 (Product ID: 1022866) on harvesting from MRP-227 inspections
  - a. Available to public for fee
3. Cable surveillance programs in Germany
  - a. **Next step:** GRS (Jendrich) to inquire with cable colleagues and share
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  - a. **Next step:** Opportunities presented in this meeting to be documented in workshop summary.
  - b. **Next step:** AECL, CNSC, NRC, PNNL, INL NSUF interested in database development. Any other parties interested?
5. Prioritized data needs
  - a. **Next step:** Smaller group meetings to prioritize data needs of interest
    - i. Material / component of interest, purpose, intended outcome
  - b. Idea: survey of participants at Environmental Degradation conference
6. EPRI report on SFP liner boric acid transport through concrete
  - a. NRC (Sircar) to contact EPRI if needed
7. Harvested Materials Research Results
  - a. **Next step:** A section of the workshop summary report to cover references from previous harvested materials research
  - b. Use references from EMDA as starting point
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Please feel free to contact me with any questions or suggestions for documenting the workshop and the next steps moving forward.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew

**Sent:** Friday, March 03, 2017 8:22 AM

**To:** 'Bernhoft, Sherry' <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean Smith' <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit' <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>;



'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; 'Roussel Guy' <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; 'john.wagner@inl.gov' <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>; 'Riccardella, Pete' <[Priccardella@Structint.com](mailto:Priccardella@Structint.com)>; 'RICHTER, Mark' <[mar@nei.org](mailto:mar@nei.org)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

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Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Ramuhalli, Pradeep](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 10, 2017 6:05:23 PM

---

Matt,  
The PNNL presentations are OK to share.

---

With best regards,  
Pradeep Ramuhalli, PhD  
Tel: 509-375-2763  
Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Sent:** Friday, March 10, 2017 4:03 AM

**To:** 'Bernhoft, Sherry' <sbernhoft@epri.com>; 'Dyle, Robin' <rdyle@epri.com>; 'Jean Smith (jmsmith@epri.com)' <jmsmith@epri.com>; 'Ahluwalia, Kawaljit' <kahluwal@epri.com>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <Richard.Reister@nuclear.energy.gov>; 'leonardk@ornl.gov' <leonardk@ornl.gov>; 'Rosseel, Thomas M.' <rosseeltm@ornl.gov>; 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P. Van Noordennen' <gpvannoordennen@energysolutions.com>; Ramuhalli, Pradeep <Pradeep.Ramuhalli@pnnl.gov>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca>; 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>; 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>; 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>; 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; 'sokolovm@ornl.gov' <sokolovm@ornl.gov>; 'desire.ndomba@canada.ca' <desire.ndomba@canada.ca>; 'khuynh@aecl.ca' <khuynh@aecl.ca>; 'higuchi@criepi.denken.or.jp' <higuchi@criepi.denken.or.jp>; 'kazunobu\_sakamoto@nsr.go.jp' <kazunobu\_sakamoto@nsr.go.jp>; 'chimi.yasuhiro@jaea.go.jp' <chimi.yasuhiro@jaea.go.jp>; 'Jackson, John Howard' <john.jackson@inl.gov>; 'Roussel Guy' <guy.roussel@Belv.be>; 'john.wagner@inl.gov' <john.wagner@inl.gov>; 'Riccardella, Pete' <Priccardella@Structint.com>; 'RICHTER, Mark' <mar@nei.org>; 'Amberge, Kyle' <kamberge@epri.com>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Poehler, Jeffrey <Jeffrey.Poehler@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Yoo, Mark <Mark.Yoo@nrc.gov>; Koshy, Thomas <Thomas.Koshy@nrc.gov>; Buford, Angela <Angela.Buford@nrc.gov>; Sircar, Madhumita <Madhumita.Sircar@nrc.gov>

**Cc:** Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>

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Dear Workshop Participants:

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- 5. Prioritized data needs
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  - b. Idea: survey of participants at Environmental Degradation conference
- 6. EPRI report on SFP liner boric acid transport through concrete
  - a. NRC (Sircar) to contact EPRI if needed
- 7. Harvested Materials Research Results
  - a. **Next step:** A section of the workshop summary report to cover references from previous harvested materials research
  - b. Use references from EMDA as starting point
  - c. **Next step:** Please send any references to harvested materials research that should be included and its outcome to Matt Hiser.

Please feel free to contact me with any questions or suggestions for documenting the workshop and the next steps moving forward.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew

**Sent:** Friday, March 03, 2017 8:22 AM

**To:** 'Bernhoft, Sherry' <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean Smith (jmsmith@epri.com)' <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit' <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>;



'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; Jackson, John Howard <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; 'Roussel Guy' <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; 'john.wagner@inl.gov' <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>; 'Riccardella, Pete' <[Priccardella@Structint.com](mailto:Priccardella@Structint.com)>; 'RICHTER, Mark' <[mar@nei.org](mailto:mar@nei.org)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building.

The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Hiser, Matthew](#)  
**To:** ["Bernhoft, Sherry"](#); ["Dyle, Robin"](#); ["Jean Smith \(jmsmith@epri.com\)"](#); ["Ahluwalia, Kawaljit"](#); ["Richard Reister \(Richard.Reister@nuclear.energy.gov\)"](#); ["leonardk@ornl.gov"](#); ["Rosseel, Thomas M."](#); ["William F Zipp \(Generation - 4\)"](#); ["Gerard P. Van Noordennen"](#); ["Ramuhalli, Pradeep \(Pradeep.Ramuhalli@pnnl.gov\)"](#); ["daniel.tello@canada.ca"](#); ["Uwe.Jendrich@grs.de"](#); ["rachid.chaouadi@sckcen.be"](#); ["arait@criepi.denken.or.jp"](#); ["alpanfa@westinghouse.com"](#); ["sokolovm@ornl.gov"](#); ["desire.ndomba@canada.ca"](#); ["khuyh@aecl.ca"](#); ["higuchi@criepi.denken.or.jp"](#); ["kazunobu\\_sakamoto@nsr.go.jp"](#); ["chimi.vasuhiro@jaea.go.jp"](#); ["Jackson, John Howard"](#); ["Roussel Guy"](#); ["john.wagner@inl.gov"](#); ["Riccardella, Pete"](#); ["RICHTER, Mark"](#); ["Amberge, Kyle"](#); ["Hull, Amy"](#); ["Moyer, Carol"](#); ["Oberson, Greg"](#); ["Audrain, Margaret"](#); ["Poehler, Jeffrey"](#); ["Hiser, Allen"](#); ["Yoo, Mark"](#); ["Koshy, Thomas"](#); ["Buford, Angela"](#); ["Sircar, Madhumita"](#)  
**Cc:** [Tregoning, Robert](#); [Purtscher, Patrick](#); [Frankl, Istvan](#)  
**Subject:** RE: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 10, 2017 7:02:42 AM

Note to requester: The yellow highlighted portions in this email record, as well as in other copies of this email, were as provided to the FOIA team.

Dear Workshop Participants:

Thank you for attending and participating in the workshop this week. I appreciate your active participation in what was a very interesting and informative discussion. I hope you were able to come away from the meeting with a better understanding of how to approach harvesting and what to expect in terms of cost, schedule, complexity, challenges, etc.

NRC will be developing a workshop summary report to be shared among meeting participants. We have also placed all of the presentations into a Google Drive folder for sharing among meeting participants (<https://drive.google.com/open?id=0B5DWMLch5YSXcnpZZ0JOS055QUU>).

I have laid out the action items and planned next steps to address each item below:

1. Sharing workshop slides (Ahluwalia)
  - a. **Next step:** Presenters, please reply to this email if you have any concerns with meeting participants sharing your slides with colleagues or other organizations. If I don't hear from you, we'll assume you're OK with sharing.
2. MRP-320 (Product ID: 1022866) on harvesting from MRP-227 inspections
  - a. Available to public for fee
3. Cable surveillance programs in Germany
  - a. **Next step:** GRS (Jendrich) to inquire with cable colleagues and share
4. Sources of Materials database
  - a. **Next step:** Opportunities presented in this meeting to be documented in workshop summary.
  - b. **Next step:** AECL, CNSC, NRC, PNNL, INL NSUF interested in database development. Any other parties interested?
5. Prioritized data needs
  - a. **Next step:** Smaller group meetings to prioritize data needs of interest
- i. Material / component of interest, purpose, intended outcome
  - b. Idea: survey of participants at Environmental Degradation conference
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Please feel free to contact me with any questions or suggestions for documenting the workshop and



the next steps moving forward.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

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Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew

**Sent:** Friday, March 03, 2017 8:22 AM

**To:** 'Bernhoft, Sherry' <sbernhoft@epri.com>; 'Dyle, Robin' <rdyle@epri.com>; 'Jean Smith (jmsmith@epri.com)' <jmsmith@epri.com>; 'Ahluwalia, Kawaljit' <kahluwal@epri.com>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <Richard.Reister@nuclear.energy.gov>; 'leonardk@ornl.gov' <leonardk@ornl.gov>; 'Rosseel, Thomas M.' <rosseeltm@ornl.gov>; 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P. Van Noordennen' <gpvannoordennen@energysolutions.com>; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <Pradeep.Ramuhalli@pnnl.gov>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca>; 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>; 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>; 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>; 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; 'sokolovm@ornl.gov' <sokolovm@ornl.gov>; 'desire.ndomba@canada.ca' <desire.ndomba@canada.ca>; 'khuynh@aecl.ca' <khuynh@aecl.ca>; 'higuchi@criepi.denken.or.jp' <higuchi@criepi.denken.or.jp>; 'kazunobu\_sakamoto@nsr.go.jp' <kazunobu\_sakamoto@nsr.go.jp>; 'chimi.yasuhiro@jaea.go.jp' <chimi.yasuhiro@jaea.go.jp>; 'Jackson, John Howard' <john.jackson@inl.gov>; 'Roussel Guy' <guy.roussel@Belv.be>; 'John.wagner@inl.gov' <john.wagner@inl.gov>; 'Riccardella, Pete' <Priccardella@Structint.com>; 'RICHTER, Mark' <mar@nei.org>

**Cc:** Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

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Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting! Please let me know if you have any questions.



Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

*Phone: 301-415-2454 | Office: TWFN 10D62*

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Hiser, Matthew](#)  
**To:** "HIGUCHI, Sadao"  
**Cc:** [Tregoning, Robert](#); 新井 拓  
**Subject:** RE: Re: Ex-plant Materials Harvesting Workshop  
**Date:** Friday, March 17, 2017 8:19:31 AM  
**Attachments:** [NRC Harvesting Workshop Attendees.docx](#)

Note to requester: Attachment is immediately following.

Dear Sadao,

Thank you for joining us for the workshop last week. We are hopeful it will lead to successful future harvesting efforts around the world.

We are planning to have a comprehensive, detailed workshop summary report, which will take some time to develop, hopefully in the next two months. I have attached the list of participants at the workshop, including their email information.

Please let me know if I can provide any further information.

Thanks!

Matt

-----Original Message-----

From: HIGUCHI, Sadao [<mailto:higuchi@criepi.denken.or.jp>]  
Sent: Friday, March 17, 2017 2:02 AM  
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>  
Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; 新井 拓 <arait@criepi.denken.or.jp>  
Subject: [External\_Sender] Re: Ex-plant Materials Harvesting Workshop

Dear Matt

Thank you for your workshop operation.

We could have very fruitfull workshop.

We also felt happy through the workshop which we are participating world wide research project.

By the way, can you tell us when we can have a workshop summary report?

And can you inform us the participants of the workshop?

We would like to report the workshop to our laboratory director with a summaryif we can have it.

Best regards,

Sadao

On Fri, 10 Mar 2017 12:02:40 +0000

"Hiser, Matthew" <Matthew.Hiser@nrc.gov> wrote:

> Dear Workshop Participants:

>

> Thank you for attending and participating in the workshop this week. I appreciate your active participation in what was a very interesting and informative discussion. I hope you were able to come away from the meeting with a better understanding of how to approach harvesting and what to expect in terms of cost, schedule, complexity, challenges, etc.

>

> NRC will be developing a workshop summary report to be shared among meeting participants. We have also placed all of the presentations into a Google Drive folder for sharing among meeting participants (<https://drive.google.com/open?id=0B5DWMLch5YSXcnpZZ0JOS055QUU>).

>

> I have laid out the action items and planned next steps to address each item below:

>

>

> 1. Sharing workshop slides (Ahluwalia)

>

> a. Next step: Presenters, please reply to this email if you have any concerns with meeting participants sharing your slides with colleagues or other organizations. If I don't hear from you, we'll assume you're OK with sharing.

>

> 2. MRP-320 (Product ID: 1022866) on harvesting from MRP-227 inspections

>

> a. Available to public for fee

>

> 3. Cable surveillance programs in Germany

>

> a. Next step: GRS (Jendrich) to inquire with cable colleagues and share

>

> 4. Sources of Materials database

>

> a. Next step: Opportunities presented in this meeting to be documented in workshop summary.

>

> b. Next step: AECL, CNSC, NRC, PNNL, INL NSUF interested in database development. Any other parties interested?

>

> 5. Prioritized data needs

>

> a. Next step: Smaller group meetings to prioritize data needs of interest

>

> i. Material / component of interest, purpose, intended outcome

>

> b. Idea: survey of participants at Environmental Degradation conference

>

> 6. EPRI report on SFP liner boric acid transport through concrete

>

> a. NRC (Sircar) to contact EPRI if needed

>

> 7. Harvested Materials Research Results

>

> a. Next step: A section of the workshop summary report to cover references from previous harvested materials research

>

> b. Use references from EMDA as starting point

>

> c. Next step: Please send any references to harvested materials research that should be included and its outcome to Matt Hiser.

>

> Please feel free to contact me with any questions or suggestions for documenting the workshop and the next steps moving forward.

>

> Thanks!

> Matt

>

> Matthew Hiser

> Materials Engineer

> US Nuclear Regulatory Commission | Office of Nuclear Regulatory

> Research Division of Engineering | Corrosion and Metallurgy Branch

> Phone: 301-415-2454 | Office: TWFN 10D62

> Matthew.Hiser@nrc.gov<<mailto:Matthew.Hiser@nrc.gov>>



>  
>  
> From: Hiser, Matthew  
> Sent: Friday, March 03, 2017 8:22 AM  
> To: 'Bernhoft, Sherry' <sbernhoft@epri.com>; 'Dyle, Robin' <rdyle@epri.com>; 'Jean Smith (jmsmith@epri.com)' <jmsmith@epri.com>; 'Ahluwalia, Kawaljit' <kahluwal@epri.com>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <Richard.Reister@nuclear.energy.gov>; 'leonardk@ornl.gov' <leonardk@ornl.gov>; 'Rosseel, Thomas M.' <rosseeltm@ornl.gov>; 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P. Van Noordennen' <gpvannoordennen@energysolutions.com>; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <Pradeep.Ramuhalli@pnnl.gov>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca>; 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>; 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>; 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>; 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; 'sokolovm@ornl.gov' <sokolovm@ornl.gov>; 'desire.ndomba@canada.ca' <desire.ndomba@canada.ca>; 'khuynh@aecl.ca' <khuynh@aecl.ca>; 'higuchi@criepi.denken.or.jp' <higuchi@criepi.d  
enken.or.jp>; 'kazunobu\_sakamoto@nsr.go.jp' <kazunobu\_sakamoto@nsr.go.jp>; 'chimi.yasuhiro@jaea.go.jp' <chimi.yasuhiro@jaea.go.jp>; 'Jackson, John Howard' <john.jackson@inl.gov>; 'Roussel Guy' <guy.roussel@Belv.be>; 'John.wagner@inl.gov' <john.wagner@inl.gov>; 'Riccardella, Pete' <Priccardella@Structint.com>; 'RICHTER, Mark' <mar@nei.org>  
> Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>  
> Subject: RE: Ex-plant Materials Harvesting Workshop  
>  
> Dear Harvesting Workshop Attendees:  
>  
> You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.  
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> If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.  
>  
> Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!  
>  
> Please let me know if you have any questions.  
>  
> Thanks!  
> Matt  
>  
> Matthew Hiser  
> Materials Engineer  
> US Nuclear Regulatory Commission | Office of Nuclear Regulatory  
> Research Division of Engineering | Corrosion and Metallurgy Branch  
> Phone: 301-415-2454 | Office: TWFN 10D62  
> Matthew.Hiser@nrc.gov<<mailto:Matthew.Hiser@nrc.gov>>  
>

Workshop Attendees

	Name	Organization	Email
Japan	Taku Arai	CRIEPI	<a href="mailto:arait@criepi.denken.or.jp">arait@criepi.denken.or.jp</a>
	Sadao Higuchi	CRIEPI	<a href="mailto:higuchi@criepi.denken.or.jp">higuchi@criepi.denken.or.jp</a>
	Kazunobu Sakamoto	JNRA	<a href="mailto:kazunobu_sakamoto@nsr.go.jp">kazunobu_sakamoto@nsr.go.jp</a>
	Yasuhiro Chimi	JAEA	<a href="mailto:chimi.yasuhiro@jaea.go.jp">chimi.yasuhiro@jaea.go.jp</a>
Europe	Uwe Jendrich	GRS	<a href="mailto:Uwe.Jendrich@grs.de">Uwe.Jendrich@grs.de</a>
	Rachid Chaouadi	SCK-CEN	<a href="mailto:rachid.chaouadi@sckcen.be">rachid.chaouadi@sckcen.be</a>
	Guy Roussel	Bel V	<a href="mailto:guy.roussel@Belv.be">guy.roussel@Belv.be</a>
Canada	Daniel Tello	CNSC	<a href="mailto:daniel.tello@canada.ca">daniel.tello@canada.ca</a>
	Désiré Ndomba	CNSC	<a href="mailto:desire.ndomba@canada.ca">desire.ndomba@canada.ca</a>
	Karen Huynh	AECL	<a href="mailto:khuynh@aecl.ca">khuynh@aecl.ca</a>
US industry	Gerry van Noordennen	Energy Solutions	<a href="mailto:gpvannoordennen@energysolutions.com">gpvannoordennen@energysolutions.com</a>
	Bill Zipp	Dominion	<a href="mailto:william.f.zipp@dom.com">william.f.zipp@dom.com</a>
	Mark Richter	NEI	<a href="mailto:mar@nei.org">mar@nei.org</a>
	Arzu Alpan	Westinghouse	<a href="mailto:alpanfa@westinghouse.com">alpanfa@westinghouse.com</a>
EPRI	Sherry Bernhoft	EPRI	<a href="mailto:sbernhof@epri.com">sbernhof@epri.com</a>
	Robin Dyle	EPRI	<a href="mailto:rdyle@epri.com">rdyle@epri.com</a>
	Jean Smith	EPRI	<a href="mailto:jmsmith@epri.com">jmsmith@epri.com</a>
	Al Ahluwalia	EPRI	<a href="mailto:kahluwal@epri.com">kahluwal@epri.com</a>
DOE	Tom Rosseel	ORNL	<a href="mailto:rosseeltm@ornl.gov">rosseeltm@ornl.gov</a>
	Rich Reister	DOE	<a href="mailto:Richard.Reister@nuclear.energy.gov">Richard.Reister@nuclear.energy.gov</a>
	Keith Leonard	ORNL	<a href="mailto:leonardk@ornl.gov">leonardk@ornl.gov</a>
	Mikhail A. Sokolov	ORNL	<a href="mailto:sokolovm@ornl.gov">sokolovm@ornl.gov</a>
	John Wagner	INL	<a href="mailto:john.wagner@inl.gov">john.wagner@inl.gov</a>
	John Jackson	INL	<a href="mailto:john.jackson@inl.gov">john.jackson@inl.gov</a>
	Pradeep Ramuhalli	PNNL	<a href="mailto:Pradeep.Ramuhalli@pnnl.gov">Pradeep.Ramuhalli@pnnl.gov</a>
NRC	Pat Purtscher	NRC	<a href="mailto:Patrick.Purtscher@nrc.gov">Patrick.Purtscher@nrc.gov</a>
	Rob Tregoning	NRC	<a href="mailto:Robert.Tregoning@nrc.gov">Robert.Tregoning@nrc.gov</a>
	Matt Hiser	NRC	<a href="mailto:Matthew.Hiser@nrc.gov">Matthew.Hiser@nrc.gov</a>
	Mita Sircar	NRC	<a href="mailto:Madhumita.Sircar@nrc.gov">Madhumita.Sircar@nrc.gov</a>
	Tom Koshy	NRC	<a href="mailto:Thomas.Koshy@nrc.gov">Thomas.Koshy@nrc.gov</a>
	Jeff Poehler	NRC	<a href="mailto:Jeffrey.Poehler@nrc.gov">Jeffrey.Poehler@nrc.gov</a>
	Allen Hiser	NRC	<a href="mailto:Allen.Hiser@nrc.gov">Allen.Hiser@nrc.gov</a>
	Angela Buford	NRC	<a href="mailto:Angela.Buford@nrc.gov">Angela.Buford@nrc.gov</a>
	Mark Kirk	NRC	<a href="mailto:Mark.Kirk@nrc.gov">Mark.Kirk@nrc.gov</a>
	Pete Ricardella	NRC/ACRS	<a href="mailto:Priccardella@Structint.com">Priccardella@Structint.com</a>

**From:** [HIGUCHI, Sadao](#)  
**To:** [Hiser, Matthew](#)  
**Cc:** [Tregoning, Robert](#); 新井 拓  
**Subject:** [External\_Sender] Re: Ex-plant Materials Harvesting Workshop  
**Date:** Saturday, March 18, 2017 12:39:54 AM

---

Dear Matt

Thank you for sending the list of participants.  
And we understood our workshop summary report in the next two months.

Thank you  
Sadao

On Fri, 17 Mar 2017 12:19:29 +0000  
"Hiser, Matthew" <Matthew.Hiser@nrc.gov> wrote:

> Dear Sadao,  
>  
> Thank you for joining us for the workshop last week. We are hopeful it will lead to successful future harvesting efforts around the world.  
>  
> We are planning to have a comprehensive, detailed workshop summary report, which will take some time to develop, hopefully in the next two months. I have attached the list of participants at the workshop, including their email information.  
>  
> Please let me know if I can provide any further information.  
>  
> Thanks!  
> Matt  
>  
> -----Original Message-----  
> From: HIGUCHI, Sadao [<mailto:higuchi@criepi.denken.or.jp>]  
> Sent: Friday, March 17, 2017 2:02 AM  
> To: Hiser, Matthew <Matthew.Hiser@nrc.gov>  
> Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; 新井 拓 <arait@criepi.denken.or.jp>  
> Subject: [External\_Sender] Re: Ex-plant Materials Harvesting Workshop  
>  
> Dear Matt  
>  
> Thank you for your workshop operation.  
> We could have very fruitfull workshop.  
> We also felt happy through the workshop which we are participating world wide research project.  
>  
> By the way, can you tell us when we can have a workshop summary report?  
> And can you inform us the participants of the workshop?  
> We would like to report the workshop to our laboratory director with a summaryif we can have it.  
>  
> Best regards,  
> Sadao  
>  
> On Fri, 10 Mar 2017 12:02:40 +0000  
> "Hiser, Matthew" <Matthew.Hiser@nrc.gov> wrote:  
>



>> Dear Workshop Participants:

>>

>> Thank you for attending and participating in the workshop this week. I appreciate your active participation in what was a very interesting and informative discussion. I hope you were able to come away from the meeting with a better understanding of how to approach harvesting and what to expect in terms of cost, schedule, complexity, challenges, etc.

>>

>> NRC will be developing a workshop summary report to be shared among meeting participants. We have also placed all of the presentations into a Google Drive folder for sharing among meeting participants (<https://drive.google.com/open?id=0B5DWMLch5YSXcnPZZ0JOS055QUU>).

>>

>> I have laid out the action items and planned next steps to address each item below:

>>

>>

>> 1. Sharing workshop slides (Ahluwalia)

>>

>> a. Next step: Presenters, please reply to this email if you have any concerns with meeting participants sharing your slides with colleagues or other organizations. If I don't hear from you, we'll assume you're OK with sharing.

>>

>> 2. MRP-320 (Product ID: 1022866) on harvesting from MRP-227 inspections

>>

>> a. Available to public for fee

>>

>> 3. Cable surveillance programs in Germany

>>

>> a. Next step: GRS (Jendrich) to inquire with cable colleagues and share

>>

>> 4. Sources of Materials database

>>

>> a. Next step: Opportunities presented in this meeting to be documented in workshop summary.

>>

>> b. Next step: AECL, CNSC, NRC, PNNL, INL NSUF interested in database development. Any other parties interested?

>>

>> 5. Prioritized data needs

>>

>> a. Next step: Smaller group meetings to prioritize data needs of interest

>>

>> i. Material / component of interest, purpose, intended outcome

>>

>> b. Idea: survey of participants at Environmental Degradation conference

>>

>> 6. EPRI report on SFP liner boric acid transport through concrete

>>

>> a. NRC (Sircar) to contact EPRI if needed

>>

>> 7. Harvested Materials Research Results

>>

>> a. Next step: A section of the workshop summary report to cover references from previous harvested materials research

>>

>> b. Use references from EMDA as starting point

>>

>> c. Next step: Please send any references to harvested materials research that should be included and its outcome to Matt Hiser.

>>

>> Please feel free to contact me with any questions or suggestions for documenting the workshop and the next steps moving forward.

>>

>> Thanks!

>> Matt

>>

>> Matthew Hiser

>> Materials Engineer

>> US Nuclear Regulatory Commission | Office of Nuclear Regulatory

>> Research Division of Engineering | Corrosion and Metallurgy Branch

>> Phone: 301-415-2454 | Office: TWFN 10D62

>> Matthew.Hiser@nrc.gov<<mailto:Matthew.Hiser@nrc.gov>>

>>

>>

>> From: Hiser, Matthew

>> Sent: Friday, March 03, 2017 8:22 AM

>> To: 'Bernhoft, Sherry' <sbernhoft@epri.com>; 'Dyle, Robin' <rdyle@epri.com>; 'Jean Smith (jmsmith@epri.com)' <jmsmith@epri.com>; 'Ahluwalia, Kawaljit' <kahluwal@epri.com>; 'Richard Reister (Richard.Reister@nuclear.energy.gov)' <Richard.Reister@nuclear.energy.gov>; 'leonardk@ornl.gov' <leonardk@ornl.gov>; 'Rosseel, Thomas M.' <rosseeltm@ornl.gov>; 'William F Zipp (Generation - 4)' <william.f.zipp@dom.com>; 'Gerard P. Van Noordennen' <gpvannoordennen@energysolutions.com>; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)' <Pradeep.Ramuhalli@pnnl.gov>; 'daniel.tello@canada.ca' <daniel.tello@canada.ca>; 'Uwe.Jendrich@grs.de' <Uwe.Jendrich@grs.de>; 'rachid.chaouadi@sckcen.be' <rachid.chaouadi@sckcen.be>; 'arait@criepi.denken.or.jp' <arait@criepi.denken.or.jp>; 'alpanfa@westinghouse.com' <alpanfa@westinghouse.com>; 'sokolovm@ornl.gov' <sokolovm@ornl.gov>; 'desire.ndomba@canada.ca' <desire.ndomba@canada.ca>; 'khuynh@aecl.ca' <khuynh@aecl.ca>; 'higuchi@criepi.denken.or.jp' <higuchi@criepi.denken.or.jp>

hi!

> @criepi.d

> enken.or.jp>; 'kazunobu\_sakamoto@nsr.go.jp' <kazunobu\_sakamoto@nsr.go.jp>; 'chimi.yasuhiro@jaea.go.jp' <chimi.yasuhiro@jaea.go.jp>; Jackson, John Howard <john.jackson@inl.gov>; 'Roussel Guy' <guy.roussel@Belv.be>; 'john.wagner@inl.gov' <john.wagner@inl.gov>; 'Riccardella, Pete' <Priccardella@Structint.com>; 'RICHTER, Mark' <mar@nei.org>

>> Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick

>> <Patrick.Purtscher@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>

>> Subject: RE: Ex-plant Materials Harvesting Workshop

>>

>> Dear Harvesting Workshop Attendees:

>>

>> You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion.

>>

>> The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building.

>>

>> The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

>>

>> If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

>>

>> Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

> >  
> > Please let me know if you have any questions.  
> >  
> > Thanks!  
> > Matt  
> >  
> > Matthew Hiser  
> > Materials Engineer  
> > US Nuclear Regulatory Commission | Office of Nuclear Regulatory  
> > Research Division of Engineering | Corrosion and Metallurgy Branch  
> > Phone: 301-415-2454 | Office: TWFN 10D62  
> > Matthew.Hiser@nrc.gov<<mailto:Matthew.Hiser@nrc.gov>>  
> >  
>



**From:** [Ramuhalli, Pradeep](#)  
**To:** [Hiser, Matthew](#); [Purtscher, Patrick](#)  
**Subject:** [External\_Sender] RE: RE: Harvesting document update  
**Date:** Monday, March 27, 2017 11:48:41 AM

---

Great! I will set up a bridge line to call in.

---

With best regards,

Pradeep Ramuhalli, PhD

Tel: 509-375-2763

Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

---

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]  
**Sent:** Monday, March 27, 2017 8:23 AM  
**To:** Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Ramuhalli, Pradeep <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>  
**Subject:** RE: RE: Harvesting document update  
2 PM any day next week is good for me as well...

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Purtscher, Patrick  
**Sent:** Monday, March 27, 2017 11:21 AM  
**To:** Ramuhalli, Pradeep <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>  
**Cc:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** RE: RE: Harvesting document update  
Next week, any day, at 2 PM Eastern looks pretty open to me.  
Pat

---

**From:** Ramuhalli, Pradeep [<mailto:Pradeep.Ramuhalli@pnnl.gov>]  
**Sent:** Monday, March 27, 2017 11:16 AM  
**To:** Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>  
**Subject:** [External\_Sender] RE: Harvesting document update  
Patrick,

Thanks. Let me take a look at these and will get back to you. It may be useful to schedule a follow-up call. Would next week work for you and Matt?

---

With best regards,

Pradeep Ramuhalli, PhD

Tel: 509-375-2763

Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

---

**From:** Purtscher, Patrick [<mailto:Patrick.Purtscher@nrc.gov>]  
**Sent:** Monday, March 27, 2017 7:58 AM  
**To:** Ramuhalli, Pradeep <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>  
**Subject:** FW: Harvesting document update

Good morning,

Here are comments from both Matt and I. Let us know if you want to discuss these comments.

Pat

---

**From:** Ramuhalli, Pradeep [<mailto:Pradeep.Ramuhalli@pnnl.gov>]

**Sent:** Wednesday, February 01, 2017 1:10 AM

**To:** Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>

**Cc:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>

**Subject:** [External\_Sender] Harvesting document update

Patrick,

Attached is an updated draft of the harvesting document. Please note – this is a draft. As always, feedback/suggested edits are welcome. I am finishing up the draft slides and will have them out later tomorrow.

With best regards,

Pradeep

---

Pradeep Ramuhalli, PhD  
Senior Research Scientist,  
Applied Physics Group  
Pacific Northwest National Laboratory  
902 Battelle Blvd.  
P.O.Box 999, MSIN K5-26  
Richland, WA 99352  
Tel: 509-375-2763  
Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)  
<http://www.pnnl.gov>

**From:** [Ramuhalli, Pradeep](mailto:Ramuhalli.Pradeep)  
**To:** [Hiser, Matthew](mailto:Hiser.Matthew)  
**Subject:** [External\_Sender] RE: RE: RE: RRIM Project Updates  
**Date:** Friday, April 15, 2016 11:14:47 AM

---

OK. I will reschedule to Monday. Thanks, and have a good weekend.

---

Pradeep Ramuhalli, PhD  
Tel: 509-375-2763  
Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Friday, April 15, 2016 8:13 AM  
**To:** Ramuhalli, Pradeep <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>  
**Subject:** RE: RE: RE: RE: RRIM Project Updates  
Hi Pradeep,  
That's a good idea – I have a call from 1:30-2:30 Monday afternoon, otherwise I'm free.  
Thanks!  
Matt

---

**From:** Ramuhalli, Pradeep [mailto:[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)]  
**Sent:** Friday, April 15, 2016 11:11 AM  
**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>  
**Subject:** [External\_Sender] RE: RE: RE: RRIM Project Updates  
Matt,

---

I am running behind – will have this by Monday. Do you want to move the call to Monday so you have a chance to review before the call?

---

Pradeep Ramuhalli, PhD  
Tel: 509-375-2763  
Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Thursday, April 14, 2016 10:53 AM  
**To:** Ramuhalli, Pradeep <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>  
**Subject:** RE: RE: RE: RRIM Project Updates  
Hi Pradeep,

---

I wanted to check on the DM welds draft write-up that you were planning to send early this week. Will you have it to me before the meeting tomorrow?  
Thanks!  
Matt

---

**From:** Hiser, Matthew  
**Sent:** Friday, April 08, 2016 1:53 PM  
**To:** 'Ramuhalli, Pradeep' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; Obodoako, Aloysius <[Aloysius.Obodoako@nrc.gov](mailto:Aloysius.Obodoako@nrc.gov)>; Knobbs, Katie <[katie.knobbs@pnnl.gov](mailto:katie.knobbs@pnnl.gov)>; Hull, Amy <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>  
**Subject:** RE: RE: RE: RRIM Project Updates  
Summary of Action Items

---

- Pradeep will provide a draft document of the review of DM welds degradation data gaps early next week (April 11-12).
- Pradeep will work with the materials group at PNNL to evaluate CASS with respect to:
  - o Materials degradation data gaps – where can harvesting add unique value
  - o Harvesting plan – what information is needed to make harvesting decisions: technical, practical considerations
  - o Expected draft deliverable by April 15-19
- In May, Katie will put together a proposal for a phased approach to develop the software tool.



- Matt will reach out within NRC to get more information on decommissioning schedules
  - o Look into FSARs for technical information related to components of interest

Thanks!

Matt

**From:** Ramuhalli, Pradeep [<mailto:Pradeep.Ramuhalli@pnnl.gov>]

**Sent:** Friday, April 08, 2016 11:34 AM

**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>; Obodoako, Aloysius <[Aloysius.Obodoako@nrc.gov](mailto:Aloysius.Obodoako@nrc.gov)>; Knobbs, Katie <[katie.knobbs@pnnl.gov](mailto:katie.knobbs@pnnl.gov)>; Hull, Amy <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>

**Subject:** [External\_Sender] RE: RE: RRIM Project Updates

Matt,

(b)(6)

I am working from home today – [REDACTED] but should be able to get on the call. Let's take care of this today. Talk to you in a bit.

---

Pradeep Ramuhalli, PhD

Tel: 509-375-2763

Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

**From:** Hiser, Matthew [<mailto:Matthew.Hiser@nrc.gov>]

**Sent:** Thursday, April 07, 2016 11:27 AM

**To:** Ramuhalli, Pradeep <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; Obodoako, Aloysius <[Aloysius.Obodoako@nrc.gov](mailto:Aloysius.Obodoako@nrc.gov)>; Knobbs, Katie <[katie.knobbs@pnnl.gov](mailto:katie.knobbs@pnnl.gov)>; Hull, Amy <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>

**Subject:** RE: RE: RRIM Project Updates

Hi Pradeep,

(b)(6) [REDACTED] I'd vote to stick with the meeting tomorrow.

(b)(6) [REDACTED] we can reschedule for Monday. I am free from 12:00 to 1:30 and 2:30 to 4:00 on Monday.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** Ramuhalli, Pradeep [<mailto:Pradeep.Ramuhalli@pnnl.gov>]

**Sent:** Thursday, April 07, 2016 12:34 PM

**To:** Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>; Obodoako, Aloysius <[Aloysius.Obodoako@nrc.gov](mailto:Aloysius.Obodoako@nrc.gov)>; Knobbs, Katie <[katie.knobbs@pnnl.gov](mailto:katie.knobbs@pnnl.gov)>; Hull, Amy <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>

**Subject:** [External\_Sender] RE: RRIM Project Updates

Matt, Amy,

(b)(6) [REDACTED]

(b)(6) [REDACTED] should we move this meeting to Monday next week? If so, what time on Monday would work for you?

Pradeep Ramuhalli, PhD

Tel: 509-375-2763

Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

-----Original Appointment-----

**From:** Ramuhalli, Pradeep

**Sent:** Thursday, March 31, 2016 9:20 AM

**To:** Ramuhalli, Pradeep; Hiser, Matthew ([Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)); Obodoako, Aloysius; Knobbs,

Katie; [amy.hull@nrc.gov](mailto:amy.hull@nrc.gov)

**Subject:** RRIM Project Updates

**When:** Friday, April 08, 2016 10:00 AM-11:00 AM (UTC-08:00) Pacific Time (US & Canada).

**Where:** Skype Meeting

---

→ [Join Skype Meeting](#)

This is an online meeting for Skype for Business, the professional meetings and communications app formerly known as Lync.

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[Find a local number](#)

Conference ID:  (b)(6)

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---

**From:** [Jackson, John Howard](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] Re: NUREG/CR-6892  
**Date:** Thursday, May 4, 2017 4:23:14 PM

---

Cool, thanks Matt!

**JOHN H. JACKSON, Ph.D.**

GAIN Technical Interface/NSUF Industry Program Lead

Idaho National Laboratory  
P.O. Box 1625  
Idaho Falls, ID. 83415-3870

Voice: 208-526-0293  
Fax: 208-526-4822

[john.jackson@inl.gov](mailto:john.jackson@inl.gov)

On Thu, May 4, 2017 at 2:06 PM, Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)> wrote:

Hi John,

It took some persistent downloading, but I got it and put it on the Google Drive for the harvesting workshop.

<https://drive.google.com/open?id=0B5DWMLch5YSXcnpZZ0IOS055QUU>

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** Jackson, John Howard [mailto:[john.jackson@inl.gov](mailto:john.jackson@inl.gov)]

**Sent:** Thursday, May 04, 2017 12:08 PM

**To:** Omesh Chopra [REDACTED] (b)(6)

**Cc:** Sebastien P Teyssyre <[sebastien.teysseyre@inl.gov](mailto:sebastien.teysseyre@inl.gov)>; Hiser, Matthew <[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)>; Rao, Appajosula <[Appajosula.Rao@nrc.gov](mailto:Appajosula.Rao@nrc.gov)>



**Subject:** [External\_Sender] NUREG/CR-6892

Omesh,

It's been a while since we've spoken. I trust that things are going well for you and that you're enjoying perhaps a bit more of a relaxed lifestyle.

I was trying to get my hands on a NUREG authored by Bill Shack (NUREG/CR-6892 "Irradiation-Assisted Stress Corrosion Cracking Behavior of Austenitic Stainless Steels Applicable to LWR Core Internals"). I keep getting an error when I try to download it from the NRC website. We were trying to follow what you did in NUREG/CR-6960 in terms of estimating the tensile properties of the sensitized 304 SS after irradiation.

Thanks,

John

**JOHN H. JACKSON, Ph.D.**

GAIN Technical Interface/NSUF Industry Program Lead

Idaho National Laboratory  
P.O. Box 1625  
Idaho Falls, ID. 83415-3870

Voice: 208-526-0293

Fax: 208-526-4822

[john.jackson@inl.gov](mailto:john.jackson@inl.gov)

**From:** [Ramuhalli, Pradeep](#)  
**To:** [Hiser, Matthew](#); [Purtscher, Patrick](#); [Tregoning, Robert](#)  
**Subject:** [External\_Sender] RE: Workshop Summary Report  
**Date:** Tuesday, May 16, 2017 5:42:36 PM

---

Matt,

Thanks – I will review and get you any comments in the next couple of days.

---

With best regards,

Pradeep Ramuhalli, PhD

Tel: 509-375-2763

Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

---

**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Sent:** Tuesday, May 16, 2017 7:43 AM

**To:** Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Tregoning, Robert  
<Robert.Tregoning@nrc.gov>; Ramuhalli, Pradeep <Pradeep.Ramuhalli@pnnl.gov>

**Subject:** RE: Workshop Summary Report

Sending the latest version with a few references to past research on harvested materials...

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew

**Sent:** Friday, May 12, 2017 5:24 PM

**To:** Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Tregoning, Robert  
<[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov))  
<[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>

**Subject:** Workshop Summary Report

Hi Pat, Rob, and Pradeep,

I'd like to share with you a largely complete initial draft of the harvesting workshop summary report. I tried to capture the important points of the presentations and discussion at the workshop and then synthesize that down to "key takeaways" (I am open to a better term, but that's what I came up with). I still need to fill in the section on "References to Past Harvested Materials Research", but otherwise consider this a complete draft.

Please feel free to review and comment the overall organization, level of detail, etc. You can also review the specific wording with edits and tracked changes if you'd like, although I'd suggest not spending too much effort down in the weeds at this point.

My hope is to get some feedback in the next 2 weeks from this group and then share with the broader group of workshop attendees by the end of May for their review and input with a target to finalize this report by the end of June.

Thanks and please let me know if you have any questions!

Matt

**From:** [Hiser, Matthew](#)  
**To:** ["Ramuhalli, Pradeep"](#)  
**Subject:** RE: RE: Synopsis on Harvesting for IAEA PLiM  
**Date:** Thursday, May 25, 2017 6:52:00 AM

---

Hi Pradeep,  
Thank you for your input on this abstract. Also, I apologize for the flip-flopping on submitting. I know you raised the idea several months ago and we didn't really engage on it.

How's the report coming? Will we be seeing a final draft soon?

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** Ramuhalli, Pradeep [mailto:Pradeep.Ramuhalli@pnnl.gov]

**Sent:** Wednesday, May 24, 2017 4:21 PM

**To:** Hiser, Matthew

**Subject:** [External\_Sender] RE: Synopsis on Harvesting for IAEA PLiM

Matt,

This looks good overall. I just had a few edits/comments. Attached is a marked up version (using track changes).

---

With best regards,

Pradeep Ramuhalli, PhD

Tel: 509-375-2763

Email: [pradeep.ramuhalli@pnnl.gov](mailto:pradeep.ramuhalli@pnnl.gov)

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**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]

**Sent:** Monday, May 22, 2017 12:19 PM

**To:** Ramuhalli, Pradeep <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>

**Subject:** FW: Synopsis on Harvesting for IAEA PLiM

Hi Pradeep,

In the last couple days, we've decided to throw in an abstract at PLiM on harvesting. Please take a look at what I attached and provide any feedback.

If you're planning to attend PLiM, I think it'd be best for you to give the talk. If not, another staff in our office, Carol Moyer, will be attending and can give the presentation.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

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**From:** Hiser, Matthew

**Sent:** Monday, May 22, 2017 2:47 PM



**To:** Hull, Amy <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>; Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Moyer, Carol <[Carol.Moyer@nrc.gov](mailto:Carol.Moyer@nrc.gov)>

**Cc:** Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** Synopsis on Harvesting for IAEA PLiM

I have attached a draft 2 page synopsis on harvesting for the IAEA PLiM conference. The plan will be for Carol to give the presentation at the conference, but we need to submit the abstract by this week if possible (deadline was last Friday).

If possible, please take a look and provide comments or edits to the abstract by Wednesday to support submission this week.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

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Division of Engineering | Corrosion and Metallurgy Branch

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[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

**From:** [Gerard P. Van Noordennen](#)  
**To:** [Hiser, Matthew](#)  
**Subject:** [External\_Sender] RE: Ex-plant Materials Harvesting Workshop  
**Date:** Thursday, June 1, 2017 7:33:06 AM  
**Attachments:** [image001.jpg](#)

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Matt,  
Excellent writeup. I have no comments.  
Thanks,  
Gerry van Noordennen  
Vice President Regulatory Affairs  
EnergySolutions

ES - 8



151 Lafayette Drive, Suite 201  
Oak Ridge, TN 37830  
Office: 865-481-6319  
Cell: (b)(6)  
[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)

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**From:** Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]  
**Sent:** Wednesday, May 31, 2017 4:21 PM  
**To:** 'Bernhoft, Sherry'; 'Dyle, Robin'; 'Jean Smith (jmsmith@epri.com)'; 'Ahluwalia, Kawaljit'; 'Richard Reister (Richard.Reister@nuclear.energy.gov)'; 'leonardk@ornl.gov'; 'Rosseel, Thomas M.'; 'William F Zipp (Generation - 4)'; Gerard P. Van Noordennen; 'Ramuhalli, Pradeep (Pradeep.Ramuhalli@pnnl.gov)'; 'daniel.tello@canada.ca'; 'Uwe.Jendrich@grs.de'; 'rachid.chaouadi@sckcen.be'; 'arait@criepi.denken.or.jp'; 'alpanfa@westinghouse.com'; 'sokolovm@ornl.gov'; 'desire.ndomba@canada.ca'; 'khuyinh@aecl.ca'; 'higuchi@criepi.denken.or.jp'; 'kazunobu\_sakamoto@nsr.go.jp'; 'chimi.yasuhiro@jaea.go.jp'; 'Jackson, John Howard'; 'Roussel Guy'; 'john.wagner@inl.gov'; 'Riccardella, Pete'; 'RICHTER, Mark'; 'Amberge, Kyle'; 'Moyer, Carol'; 'Oberson, Greg'; 'Audrain, Margaret'; 'Poehler, Jeffrey'; 'Hiser, Allen'; 'Yoo, Mark'; 'Koshy, Thomas'; 'Buford, Angela'; 'Sircar, Madhumita'  
**Cc:** Tregoning, Robert; Purtscher, Patrick; Frankl, Istvan; Hull, Amy  
**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Workshop Participants:

I would like to share for your review and comment the workshop summary report (attached). In the report, we tried to capture as much of the discussion as possible, while focusing on the key takeaways that might be useful for all participants as they consider harvesting in the future. In particular, please review how your presentation and contribution to the discussion is characterized, in case you feel it should be clarified in any way. Feel free to provide additional references to previous research on harvested materials that should be captured in this report. Comments, edits, and suggestions on any other parts of the report are welcome.

**Please provide your input by June 30** at the latest and we will try to finalize the report by sometime in July.

As indicated in action items 4 and 5, we will be pursuing further coordination efforts on data needs for harvesting and a sources of materials database and welcome any other parties that may be interested in participating in these discussions.

Thank you once again for your participation and engagement in this workshop!

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew

**Sent:** Friday, March 17, 2017 8:39 AM

**To:** 'Bernhoft, Sherry' <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean Smith' <[jmsmith@epri.com](mailto:jmsmith@epri.com)> <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit' <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)> <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)> <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'Jackson, John Howard' <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; 'Roussel Guy' <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; 'John.wagner@inl.gov' <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>; 'Riccardella, Pete' <[Priccardella@Structint.com](mailto:Priccardella@Structint.com)>; 'RICHTER, Mark' <[mar@nei.org](mailto:mar@nei.org)>; 'Amberge, Kyle' <[kamberge@epri.com](mailto:kamberge@epri.com)>; 'Hull, Amy' <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>; 'Moyer, Carol' <[Carol.Moyer@nrc.gov](mailto:Carol.Moyer@nrc.gov)>; 'Oberson, Greg' <[Greg.Oberson@nrc.gov](mailto:Greg.Oberson@nrc.gov)>; 'Audrain, Margaret' <[Margaret.Audrain@nrc.gov](mailto:Margaret.Audrain@nrc.gov)>; 'Poehler, Jeffrey' <[Jeffrey.Poehler@nrc.gov](mailto:Jeffrey.Poehler@nrc.gov)>; 'Hiser, Allen' <[Allen.Hiser@nrc.gov](mailto:Allen.Hiser@nrc.gov)>; 'Yoo, Mark' <[Mark.Yoo@nrc.gov](mailto:Mark.Yoo@nrc.gov)>; 'Koshy, Thomas' <[Thomas.Koshy@nrc.gov](mailto:Thomas.Koshy@nrc.gov)>; 'Buford, Angela' <[Angela.Buford@nrc.gov](mailto:Angela.Buford@nrc.gov)>; 'Sircar, Madhumita' <[Madhumita.Sircar@nrc.gov](mailto:Madhumita.Sircar@nrc.gov)>;  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Workshop Participants:

I have attached a list of participants in last week's workshop, along with their email for contact. Also, I have not received any concerns from the presenters regarding sharing slides, so feel free to share the slides, which are available on Google Drive: <https://drive.google.com/open?id=0B5DWMLch5YSXcnpZ7OJOS055QUU>.

We hope to share a detailed workshop summary report in the next two months.

Thanks!

Matt

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**From:** Hiser, Matthew

**Sent:** Friday, March 10, 2017 7:03 AM

**To:** 'Bernhoft, Sherry' <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean Smith' <[jmsmith@epri.com](mailto:jmsmith@epri.com)> <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit' <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard



Reister ([Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov))' <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>;  
'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gpvannoordennen@energysolutions.com](mailto:gpvannoordennen@energysolutions.com)>; 'Ramuhalli, Pradeep ([Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov))' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>;  
'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>;  
'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>;  
'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>;  
'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'Jackson, John Howard' <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; 'Roussel Guy' <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; 'john.wagner@inl.gov' <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>; 'Riccardella, Pete' <[Priccardella@Structint.com](mailto:Priccardella@Structint.com)>; 'RICHTER, Mark' <[mar@nei.org](mailto:mar@nei.org)>; 'Amberge, Kyle' <[kamberge@epri.com](mailto:kamberge@epri.com)>; 'Hull, Amy' <[Amy.Hull@nrc.gov](mailto:Amy.Hull@nrc.gov)>; 'Moyer, Carol' <[Carol.Moyer@nrc.gov](mailto:Carol.Moyer@nrc.gov)>; 'Oberson, Greg' <[Greg.Oberson@nrc.gov](mailto:Greg.Oberson@nrc.gov)>; 'Audrain, Margaret' <[Margaret.Audrain@nrc.gov](mailto:Margaret.Audrain@nrc.gov)>; 'Poehler, Jeffrey' <[Jeffrey.Poehler@nrc.gov](mailto:Jeffrey.Poehler@nrc.gov)>; 'Hiser, Allen' <[Allen.Hiser@nrc.gov](mailto:Allen.Hiser@nrc.gov)>; 'Yoo, Mark' <[Mark.Yoo@nrc.gov](mailto:Mark.Yoo@nrc.gov)>; 'Koshy, Thomas' <[Thomas.Koshy@nrc.gov](mailto:Thomas.Koshy@nrc.gov)>; 'Buford, Angela' <[Angela.Buford@nrc.gov](mailto:Angela.Buford@nrc.gov)>; 'Sircar, Madhumita' <[Madhumita.Sircar@nrc.gov](mailto:Madhumita.Sircar@nrc.gov)>  
**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Workshop Participants:

Thank you for attending and participating in the workshop this week. I appreciate your active participation in what was a very interesting and informative discussion. I hope you were able to come away from the meeting with a better understanding of how to approach harvesting and what to expect in terms of cost, schedule, complexity, challenges, etc.

NRC will be developing a workshop summary report to be shared among meeting participants. We have also placed all of the presentations into a Google Drive folder for sharing among meeting participants (<https://drive.google.com/open?id=0B5DWMLch5YSXcnpZZ0JOS055QUU>).

I have laid out the action items and planned next steps to address each item below:

1. Sharing workshop slides (Ahluwalia)
  - a. **Next step:** Presenters, please reply to this email if you have any concerns with meeting participants sharing your slides with colleagues or other organizations. If I don't hear from you, we'll assume you're OK with sharing.
2. MRP-320 (Product ID: 1022866) on harvesting from MRP-227 inspections
  - a. Available to public for fee
3. Cable surveillance programs in Germany
  - a. **Next step:** GRS (Jendrich) to inquire with cable colleagues and share
4. Sources of Materials database
  - a. **Next step:** Opportunities presented in this meeting to be documented in workshop summary.
  - b. **Next step:** AECL, CNSC, NRC, PNNL, INL NSUF interested in database development. Any other parties interested?
5. Prioritized data needs

- a. **Next step:** Smaller group meetings to prioritize data needs of interest
  - i. Material / component of interest, purpose, intended outcome
- b. Idea: survey of participants at Environmental Degradation conference
- 6. EPRI report on SFP liner boric acid transport through concrete
  - a. NRC (Sircar) to contact EPRI if needed
- 7. Harvested Materials Research Results
  - a. **Next step:** A section of the workshop summary report to cover references from previous harvested materials research
  - b. Use references from EMDA as starting point
  - c. **Next step:** Please send any references to harvested materials research that should be included and its outcome to Matt Hiser.

Please feel free to contact me with any questions or suggestions for documenting the workshop and the next steps moving forward.

Thanks!

Matt

**Matthew Hiser**

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)

---

**From:** Hiser, Matthew

**Sent:** Friday, March 03, 2017 8:22 AM

**To:** 'Bernhoft, Sherry' <[sbernhoft@epri.com](mailto:sbernhoft@epri.com)>; 'Dyle, Robin' <[rdyle@epri.com](mailto:rdyle@epri.com)>; 'Jean Smith' <[jmsmith@epri.com](mailto:jmsmith@epri.com)>; 'Ahluwalia, Kawaljit' <[kahluwal@epri.com](mailto:kahluwal@epri.com)>; 'Richard Reister' <[Richard.Reister@nuclear.energy.gov](mailto:Richard.Reister@nuclear.energy.gov)>; 'leonardk@ornl.gov' <[leonardk@ornl.gov](mailto:leonardk@ornl.gov)>; 'Rosseel, Thomas M.' <[rosseeltm@ornl.gov](mailto:rosseeltm@ornl.gov)>; 'William F Zipp (Generation - 4)' <[william.f.zipp@dom.com](mailto:william.f.zipp@dom.com)>; 'Gerard P. Van Noordennen' <[gvpvan Noordennen@energysolutions.com](mailto:gvpvan Noordennen@energysolutions.com)>; 'Ramuhalli, Pradeep' <[Pradeep.Ramuhalli@pnnl.gov](mailto:Pradeep.Ramuhalli@pnnl.gov)>; 'daniel.tello@canada.ca' <[daniel.tello@canada.ca](mailto:daniel.tello@canada.ca)>; 'Uwe.Jendrich@grs.de' <[Uwe.Jendrich@grs.de](mailto:Uwe.Jendrich@grs.de)>; 'rachid.chaouadi@sckcen.be' <[rachid.chaouadi@sckcen.be](mailto:rachid.chaouadi@sckcen.be)>; 'arait@criepi.denken.or.jp' <[arait@criepi.denken.or.jp](mailto:arait@criepi.denken.or.jp)>; 'alpanfa@westinghouse.com' <[alpanfa@westinghouse.com](mailto:alpanfa@westinghouse.com)>; 'sokolovm@ornl.gov' <[sokolovm@ornl.gov](mailto:sokolovm@ornl.gov)>; 'desire.ndomba@canada.ca' <[desire.ndomba@canada.ca](mailto:desire.ndomba@canada.ca)>; 'khuynh@aecl.ca' <[khuynh@aecl.ca](mailto:khuynh@aecl.ca)>; 'higuchi@criepi.denken.or.jp' <[higuchi@criepi.denken.or.jp](mailto:higuchi@criepi.denken.or.jp)>; 'kazunobu\_sakamoto@nsr.go.jp' <[kazunobu\\_sakamoto@nsr.go.jp](mailto:kazunobu_sakamoto@nsr.go.jp)>; 'chimi.yasuhiro@jaea.go.jp' <[chimi.yasuhiro@jaea.go.jp](mailto:chimi.yasuhiro@jaea.go.jp)>; 'Jackson, John Howard' <[john.jackson@inl.gov](mailto:john.jackson@inl.gov)>; 'Roussel Guy' <[guy.roussel@Belv.be](mailto:guy.roussel@Belv.be)>; 'John.wagner@inl.gov' <[john.wagner@inl.gov](mailto:john.wagner@inl.gov)>; 'Riccardella, Pete' <[Priccardella@Structint.com](mailto:Priccardella@Structint.com)>; 'RICHTER, Mark' <[mar@nei.org](mailto:mar@nei.org)>

**Cc:** Tregoning, Robert <[Robert.Tregoning@nrc.gov](mailto:Robert.Tregoning@nrc.gov)>; Purtscher, Patrick <[Patrick.Purtscher@nrc.gov](mailto:Patrick.Purtscher@nrc.gov)>; Frankl, Istvan <[Istvan.Frankl@nrc.gov](mailto:Istvan.Frankl@nrc.gov)>

**Subject:** RE: Ex-plant Materials Harvesting Workshop

Dear Harvesting Workshop Attendees:

You are receiving this email because I have you recorded as attending the upcoming Ex-plant Materials Harvesting Workshop on March 7-8 at USNRC headquarters in Rockville, MD. I have



attached the final workshop agenda as well as the workshop introduction slides that cover meeting logistics, motivation, approach, expected outcome, and session expectations. We are hoping these slides provide a common vision for the workshop that will allow for a focused, productive discussion. The workshop will be held in NRC's Three White Flint North (3WFN) building, which is directly adjacent to the White Flint Metro station, in room 1C3 on the first floor. I have attached a map of the local area showing the Metro station and the 3WFN building.

The workshop is scheduled to start at 8:00 on Tuesday, March 7. I recommend planning to arrive at 3WFN around 7:30-7:45 in order to go through security to enter the building.

If you have not yet responded, please let me know if you plan to join for the dinner with other workshop participants, so I can make the appropriate reservation.

Thank you for your participation in the workshop. We are looking forward to the discussion and engagement and appreciate your contribution to a productive and interesting meeting!

Please let me know if you have any questions.

Thanks!

Matt

***Matthew Hiser***

Materials Engineer

US Nuclear Regulatory Commission | Office of Nuclear Regulatory Research

Division of Engineering | Corrosion and Metallurgy Branch

Phone: 301-415-2454 | Office: TWFN 10D62

[Matthew.Hiser@nrc.gov](mailto:Matthew.Hiser@nrc.gov)