From: Audrain, Margaret
Sent: Fri, 3 Nov 2017 15:36:03 -0400
To: Frankl, Istvan
Cc: Purtscher, Patrick;Hiser, Matthew
Subject: RE: ACTION: ANL Harvesting trip

Steve,

I'm in training all day Tuesday so I scheduled for Monday afternoon. Please let me know if you'd rather do Thursday.

Thanks,

Meg

From: Frankl, Istvan
Sent: Friday, November 03, 2017 3:11 PM
To: Audrain, Margaret <Margaret.Audrain@nrc.gov>
Cc: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: ACTION: ANL Harvesting trip
Importance: High

Meg,

Please schedule a meeting on Tuesday for us to discuss this topic as well as the specific scope. I need to understand why trips are necessary at this stage. It would be advantageous to solicit "inventory" of ex-plant materials from the DOE labs in support of the harvesting database. Would they "volunteer" such information? Could this exchange be covered with existing MOUs?

Also, Pat has approved trip to ANL that could be extended to cover this topic.

Thanks,

Steve

From: Audrain, Margaret
Sent: Thursday, November 02, 2017 4:18 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: ANL Harvesting trip

Steve,

Matt, Pat and I would like to send two of us (or three if budget allows) to ANL for a day trip in December or January. We are trying to make a harvesting data base of materials that are available at the national labs and think ANL would be a good place to start because it's an

inexpensive trip and they have a smaller amount of material for getting started with this program.

Do we have the budget to send us? We'll have a better idea of when we'd be going after talking to the ANL folks but wanted to check with you to see if the trip is feasible first.

Let me know if you have any questions or would like to meet to discuss this next week.

Thanks!

Meg

From: Hull, Amy
Sent: Tue, 14 Jun 2016 07:58:44 -0400
To: Hiser, Matthew
Subject: RE: ACTION: Division Review of EPRI MOU Addenda & Response Timeline

Thanks Matt!

From: Hiser, Matthew
Sent: Tuesday, June 14, 2016 7:56 AM
To: Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: ACTION: Division Review of EPRI MOU Addenda & Response Timeline

Hi Amy,

I don't think at this point. We had some good engagement from EPRI and DOE at the last deep dive meeting and agreed to discuss this separately and try to have a joint workshop in a few months... We can determine if an MOU is needed later I think.

Thanks!
Matt

From: Hull, Amy
Sent: Tuesday, June 14, 2016 7:40 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: ACTION: Division Review of EPRI MOU Addenda & Response Timeline
Importance: High

Do you want something in here for harvesting?

From: Frankl, Istvan
Sent: Monday, June 13, 2016 4:09 PM
To: Focht, Eric <Eric.Focht@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>
Subject: ACTION: Division Review of EPRI MOU Addenda & Response Timeline
Importance: High

All,

Please review the enclosed request from our TA and let me know ASAP if the addendum/addenda for which you are the POC, needs revision, and if so, please provide update to me no later than Monday, June 20.

Based on our earlier communication on this topic my current understanding is that our addenda do not need revisions but please confirm to me ASAP.

Thanks,

Steve

From: Berrios, Ilka
Sent: Monday, June 13, 2016 3:53 PM
To: Rudland, David <David.Rudland@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Ake, Jon <Jon.Ake@nrc.gov>; Jung, Ian <Ian.Jung@nrc.gov>; Burke, John <John.Burke@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Focht, Eric <Eric.Focht@nrc.gov>; Miller, Kenneth A <Kenn.Miller@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>
Subject: Division Review of EPRI MOU Addenda & Response Timeline

All,

Attached are the draft cover letter and EPRI MOU that is being developed to support the renewal activity. As you are aware, there are a number of Addenda that expire on Sept 30, 2016, that maybe renewed, modified or cancelled as part of this activity. Hopefully, most addenda will only require updating the expiration date and POCs. A few may require scope modifications to complete these updates and interaction with EPRI counterparts on those revisions. Last attachment contains a list of recent EPRI Addenda. Attached is also a template for a simple Addendum renewal (it is based on ML101270008).

Could you please provide you input by 06/28/2016? Please let me know if you have any questions.

Acquisition and Testing of Zion Spent Fuel Pool Neutron Absorber Materials	September 30, 2016	Eric Focht, DE
Aging, Qualification and Condition Monitoring of Electrical Cables	September 30, 2016	Kenn Miller, DE
Digital I&C and Human Factors	September 30, 2016	Ian Jung,DE / Sean Peters, DRA
Long Term Operations Beyond 60 Years	September 30, 2016	Amy Hull, Raj Iyengar DE
Primary Water Stress Corrosion Cracking - Crack Initiation Testing	September 30, 2016	Erick Focht, Greg Oberson DE
Primary Water Stress Corrosion Cracking Expert Panel Activities	September 30, 2016	Greg Oberson, DE Rob Tregoning, DE
Seismic Risk (renewal)	September 30, 2016	Jon Ake, DE
Cooperative Nuclear Safety Research, Extremely Low Probability of Rupture (XLPR) V2		Matthew Homiack, DE

From: Frankl, Istvan
Sent: Thu, 2 Feb 2017 08:02:55 -0600
To: Hiser, Matthew
Subject: RE: Action: FANC Research on decommissioned RPV

Great! We are so proactive!

From: Hiser, Matthew
Sent: Thursday, February 02, 2017 9:01 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Berrios, Ilka <Ilka.Berrios@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Action: FANC Research on decommissioned RPV

Hi Steve,

Yes, SCK-CEN is participating in the workshop. In fact, our contact with them is one of the contacts on the attached white paper from FANC.

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

From: Frankl, Istvan
Sent: Thursday, February 02, 2017 8:56 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Berrios, Ilka <Ilka.Berrios@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: FW: Action: FANC Research on decommissioned RPV

Rob

Would FANC be a good candidate for the upcoming harvesting workshop?

Thanks,

Steve

From: Berrios, Ilka
Sent: Thursday, February 02, 2017 8:19 AM

To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>
Subject: FW: Action: FANC Research on decommissioned RPV

Please see below. Please let me know your thoughts.

Thanks,

Ilka
415-2404

From: Sangimino, Donna-Marie
Sent: Wednesday, February 01, 2017 5:10 PM
To: Berrios, Ilka <Ilka.Berrios@nrc.gov>
Cc: RES_International_Mailbox <RES_International_Mailbox@nrc.gov>
Subject: Action: FANC Research on decommissioned RPV

Hi Ilka,

OIP reached out regarding the email below and attached, asking if RES is interested in working with the Federal Agency for Nuclear Control (FANC) in Belgium on material properties of decommissioned RPV (no rush).

Thanks

Donna-Marie

From: VINCK Marion [mailto:Marion.VINCK@FANC.FGOV.BE]
Sent: Friday, December 02, 2016 8:18 AM
To: Holzman (Schwartzman), Jennifer <Jennifer.Schwartzman@nrc.gov>
Cc: van Walle Eric (eric.van.walle@sckcen.be) <eric.van.walle@sckcen.be>
Subject: [External_Sender] RE: Research on decommissioned RPV

Dear Jennifer,

Please find attached the requested leaflet.

Kind regards

Marion VINCK
Management Assistant to the DG
FANC-AFCN
Tel : +32 (0)2. 289.2100
Fax : +32 (0)2. 289.2103
Gsm : [redacted] (b)(6)
marion.vinck@fanc.fgov.be

http://www.fanc.fgov.be/

FANC

federal agency for nuclear control

From: Holzman (Schwartzman), Jennifer [mailto:Jennifer.Schwartzman@nrc.gov]
Sent: donderdag 1 december 2016 20:05
To: VINCK Marion
Subject: Research on decommissioned RPV

Dear Marion,

Greetings from the USNRC – I hope this message finds you well!

I am writing because, during Director General Bens' meeting with the USNRC delegation during the recent General Conference, he mentioned that FANC may be initiating a research project to examine the dismantled reactor pressure vessel of a decommissioned NPP. A brochure on the project was provided to our delegation. I was hoping that it might be possible to obtain an electronic copy of this information so we may share it with our technical experts. Your assistance is greatly appreciated.

Best regards,
Jennifer

Jennifer Schwartzman Holzman
Sr. International Relations Officer
Office of International Programs
U.S. Nuclear Regulatory Commission
+1-301-287-9090
jennifer.schwartzman@nrc.gov

Note to requester: This empty box was in the original email record provided to the FOIA team, it links to the FANC web site, https://fanc.fgov.be/nl.

Denk a.u.b. aan het milieu voordat u deze mail afdrukt.
S.V.P., pensez à l'environnement avant d'imprimer cet e-mail.

Disclaimer (Fr) - Disclaimer (Nl)

From: Frankl, Istvan
Sent: Fri, 8 Sep 2017 11:43:56 -0400
To: Hiser, Matthew
Subject: RE: ACTION: input for October ACRS meeting

Thanks, Matt,

I addressed the original request to the program leads, so I thought that clarified that at a minimum our major programs should be covered in the slides. I agree that we also have other activities and initiatives that should be included at some level, especially if we have UNR/RAR/IAP that supports that activity. For now, please focus on NMSS support, assist Sri with IAD and coordinate with Carol/Amy on harvesting.

Steve

From: Hiser, Matthew
Sent: Friday, September 08, 2017 11:29 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: ACTION: input for October ACRS meeting

Thanks Steve!

I guess my observation is that it might not be entirely clear to CMB staff (myself included) what the activities are and how they should be grouped (e.g. harvesting under SLR).

Perhaps you could provide a list of what you would like as the list of CMB's activities (presumably Greg's 5 items + ANLWR + NAM + Additive manufacturing? + ???). My personal feeling was that I wasn't clear on what the breakdown was of CMB activities and what I should provide input for. I also got the impression from Greg's email and example that the intent is not necessarily to be 100% comprehensive on all CMB activities and rather highlight representative examples (but maybe that impression is not accurate).

Thanks!
Matt

From: Frankl, Istvan
Sent: Friday, September 08, 2017 11:22 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: ACTION: input for October ACRS meeting

Greg's input was just general guidance. I would not limit activities to 5, so at a minimum we should cover all major programs in CMB, including IAD and spent fuel dry storage system aging management. Both of these are covered with new UNRs. Harvesting could be covered under SLR (please coordinate with Carol/Amy on this). We also have recent initiatives, such as, ANLWRs and Additive Manufacturing that at a minimum should be listed.

Thanks,

Steve

From: Hiser, Matthew
Sent: Friday, September 08, 2017 8:14 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: ACTION: input for October ACRS meeting

Hi Steve,

Just to clarify on this input request, is CMB definitely going with the 5 examples Greg showed in his attachment? (PWSCC, IAD, SG tube integrity, SLR, Spent fuel dry storage system aging management) Or are you going to define which 3 to 5 programs will be our examples? Other potential activities in our branch I can think of include NAM, Adv non-LWRs, and harvesting.

Just looking for a little more clarity on what we should be providing input for. If it's the 5 Greg suggested, I'll work with Sri on IAD and take the lead on the spent fuel aging management slide…

Thanks!
Matt

From: Frankl, Istvan
Sent: Thursday, September 07, 2017 2:20 PM
To: Focht, Eric <Eric.Focht@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Rao, Appajosula <Appajosula.Rao@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: ACTION: input for October ACRS meeting
Importance: High

Program Leads,

In prep for the upcoming RES/DE Research Overview Briefing for ACRS we are requested to provide summary slides on our major activities/ programs.

Please review the more detailed request below and the attachment (Greg was nice to use CMB for the DE template) and complete your draft slide using the link below by COB Friday, September 15:

G:\DE\CMB\ACRS\2017 DE ACRS CMB input.docx

After we are done with the draft, I will ask Rob to review and comment on our inputs.

Thanks,

Steve

From: Oberson, Greg
Sent: Thursday, September 07, 2017 10:47 AM

To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Koshy, Thomas <Thomas.Koshy@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Boyce, Tom <Tom.Boyce@nrc.gov>
Cc: Ake, Jon <Jon.Ake@nrc.gov>; Birla, Sushil <Sushil.Birla@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: ACTION: input for October ACRS meeting

BCs,
The division needs to begin preparing the presentation for the October 31 briefing to ACRS full committee on the DE research overview. The beginning of the process is to make a presentation outline that we will be able to share with some members in a pre-meeting on October 5.

Your action is to provide the input for your branch following the attached outline and instructions. Please try to adhere to the format of the example. This input should be largely transferrable to the eventual slides.

DRA has already made their briefing to ACRS. ACRS has an apparent interest in the scope of our anticipatory research, and expressed some concern about a lack of that in DRA. Therefore, it would be helpful if you are able to highlight anticipatory research as an example for your branch. Further, it was suggested that ACRS will want to hear about what research that is not being done, that the staff feels should be done, and the potential consequences of not undertaking the research.

I have placed outline templates for your branch in SharePoint in the folder: http://fusion.nrc.gov/res/team/de/Divison%20Meeting%20Docs/ACRS/October%202017%20ACRS%20briefing. Please use those to provide your input.

Due date for this input is COB September 28. BCs, please coordinate with SLs as needed.

For your info, the DRA slides are available here, though ours will probably end up a bit different. "G:\DRA\Front Office\Technical Assistant\ACRS Sept 6 2017\DRA RES ACRS Presentation Sept 6 2017 Final.pptx"

Please let me know if you have any questions.

Thanks,
Greg

From: Frankl, Istvan
Sent: Sat, 13 Jan 2018 17:05:03 +0000
To: Hiser, Matthew
Subject: RE: ACTION: input to bilateral meeting planning sheets for RIC

Thanks, Matt.

Good inputs.

Steve

From: Hiser, Matthew
Sent: Friday, January 12, 2018 12:16 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: ACTION: input to bilateral meeting planning sheets for RIC

Hi Steve,

I have added / modified language for harvesting for each of the five countries sheets on the G: drive based on input from Rob, Pat, and Meg.

Thanks!
Matt

From: Frankl, Istvan
Sent: Monday, January 08, 2018 4:13 PM
To: RES_DE_CMB <RESDECMB@nrc.gov>
Subject: FW: ACTION: input to bilateral meeting planning sheets for RIC
Importance: High

All,

Please review the enclosed request from our TA and use the enclosed links for your review and changes.

G:\DE\CMB\International\International Priorities - Canada - CMB.docx

G:\DE\CMB\International\International Priorities - France - CMB.docx

G:\DE\CMB\International\International Priorities - Germany - CMB.docx

G:\DE\CMB\International\International Priorities - Japan - CMB.docx

G:\DE\CMB\International\International Priorities - South Korea - CMB.docx

This is a good opportunity to take advantage of the international bilateral meetings at the RIC to request assistance or engagement to help support our research programs.

Please complete this action by COB Thursday, January 11.

Thanks,

Steve

From: Oberson, Greg
Sent: Thursday, January 04, 2018 3:31 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Boyce (RES), Tom <Tom.Boyce@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Jenkins, Ronaldo <Ronaldo.Jenkins@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Ake, Jon <Jon.Ake@nrc.gov>; Birla, Sushil <Sushil.Birla@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Homiack, Matthew <Matthew.Homiack@nrc.gov>; Gardocki, Stanley <Stanley.Gardocki@nrc.gov>
Cc: Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: ACTION: input to bilateral meeting planning sheets for RIC

BCs & SLs:
RES is preparing for bilateral meetings with Canada, France, Japan, Germany, and South Korea at RIC. IPT has requested that for each country, that we provide a listing of requests for assistance or engagement to help support our research programs. These are not intended to document ongoing collaborations, but rather new requests. I've started lists using info previously submitted under the "international prioritization" activity. Please add/delete/edit. The status line should indicate if you have had any previously discussions or interactions on the topic. If you have had none, you should indicate as such. You can mark up these sheets and email back to me. I will consolidate the list. Please aim to provide by Jan. 16. Please let me know if you have any questions.

Greg

From: Audrain, Margaret
Sent: Fri, 12 Jan 2018 14:37:10 +0000
To: Tregoning, Robert;Hiser, Matthew;Purtscher, Patrick
Subject: RE: ACTION: input to bilateral meeting planning sheets for RIC

Matt,

Looks good to me.

From: Tregoning, Robert
Sent: Friday, January 12, 2018 9:05 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: ACTION: input to bilateral meeting planning sheets for RIC

Matt:

It looks fine. I would just tweak the last sentence to say that we're "…seeking to collaborate with other organizations".

RT

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: Friday, January 12, 2018 8:22 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: ACTION: input to bilateral meeting planning sheets for RIC

Hi guys,

Here is my stab at some language for those RIC meeting talking points – any other thoughts or edits?

1. Request for engagement on materials harvesting from decommissioned reactors_
    - Overview – Components or materials may be harvested from decommissioning reactors, with particular interest in reactor pressure vessel (RPV) steel, reactor internals, concrete, and cables. NRC is pursuing a comprehensive strategy towards

ex-plant harvesting, which involves identifying high-value materials to harvest based on matching available materials for harvesting with prioritized data needs.

- Regulatory Need – Harvested materials may be tested to assess the effects of in-plant conditions on component integrity, with focus on aging-related degradation relevant to subsequent license renewal
- Status – NRC is seeking other organizations that are interested in prioritizing data needs for harvesting and identifying optimal opportunities for harvesting.

2. Request for engagement on materials harvesting from decommissioned reactors
   - Overview – Components or materials may be harvested from decommissioning reactors, with particular interest in reactor pressure vessel (RPV) steel, reactor internals, concrete, and cables. NRC is pursuing a comprehensive strategy towards ex-plant harvesting, which involves identifying high-value materials to harvest based on matching available materials for harvesting with prioritized data needs.
   - Regulatory Need – Harvested materials may be tested to assess the effects of in-plant conditions on component integrity, with focus on aging-related degradation relevant to subsequent license renewal
   - Status – NRC is seeking other organizations that are interested in prioritizing data needs for harvesting and identifying optimal opportunities for harvesting.

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

From: Tregoning, Robert
Sent: Monday, January 08, 2018 7:44 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: FW: ACTION: input to bilateral meeting planning sheets for RIC

Guys:

See email below and attachments from Greg on upcoming RIC discussions with several countries. There are bullets related to harvesting on France, Japan, and South Korea but we may want to change the wording to reflect the broader harvesting effort that we're doing (i.e., not simply requesting materials but developing a strategy to see what high value materials/components may be available and then proceeding accordingly). Does someone want to take a stab at modifying the bullets? Also, I think we should also add this as a topic with Germany and Canada. Thoughts on this?

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: Oberson, Greg
Sent: Thursday, January 04, 2018 3:31 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Boyce (RES), Tom <Tom.Boyce@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Jenkins, Ronaldo <Ronaldo.Jenkins@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Ake, Jon <Jon.Ake@nrc.gov>; Birla, Sushil <Sushil.Birla@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Homiack, Matthew <Matthew.Homiack@nrc.gov>; Gardocki, Stanley <Stanley.Gardocki@nrc.gov>
Cc: Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: ACTION: input to bilateral meeting planning sheets for RIC

BCs & SLs:
RES is preparing for bilateral meetings with Canada, France, Japan, Germany, and South Korea at RIC. IPT has requested that for each country, that we provide a listing of requests for assistance or engagement to help support our research programs. These are not intended to document ongoing collaborations, but rather new requests. I've started lists using info previously submitted under the "international prioritization" activity. Please add/delete/edit. The status line should indicate if you have had any previously discussions or interactions on the topic. If you have had none, you should indicate as such. You can mark up these sheets and email back to me. I will consolidate the list. Please aim to provide by Jan. 16. Please let me know if you have any questions.

Greg

From: Hiser, Matthew
Sent: Thu, 30 Nov 2017 15:22:40 +0000
To: Purtscher, Patrick
Subject: RE: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

Hi Pat,

It is Klaus Germerdonk from ENSI.(Klaus.Germerdonk@ensi.ch)

I think I have more info somewhere on their harvesting plans (they gave a presentation to NRC staff at the RIC back in 2016). I'll try to find the slides tomorrow – need to rest now…

Thanks!
Matt

From: Purtscher, Patrick
Sent: Wednesday, November 29, 2017 10:00 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)
Importance: High

Good morning,

What was the name of the Swiss regulator who was interested in working on harvesting? I don't see them in the Country Sheets as a potential international partner.

Pat

From: Frankl, Istvan
Sent: Tuesday, November 28, 2017 6:27 PM
To: RES_DE_CMB <RESDECMB@nrc.gov>
Subject: FW: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)
Importance: High

Program Leads,

This is the opportunity for you to provide inputs and updates for the CMB specific international efforts/ engagements within the RES International Strategy.

Please review the enclosed request below for details and provide inputs (if any) for the following:

1) RES International Strategy Summary - Please use the link below to review the general description of CMB specific efforts for completeness and alignment on priorities. If an item is missing, please let me know ASAP.

G:\DE\CMB\RES International Strategy Implementation - CMB.docx

2) Country Sheets – Please use the link below to review for accuracy and include any missing items on the Excel sheets. Please use red fonts for additions/changes. The CMB filtered inputs are organized by 5 pilot countries (Japan, Canada, Germany, South Korea and IRSN). To support bilateral discussions with counter parts, please fully populate the fields to inform engagements with these countries.

   G:\DE\CMB\Follow up Ticket - by country - CMB.xlsx

In your review please consider your relatively recent inputs provided on this subject which can be found here:

G:\DE\CMB\International Strategy info from Staff - CMB.xlsx

Please complete this action by COB Monday, December 4.

Thanks,

Steve

From: Oberson, Greg
Sent: Monday, November 20, 2017 9:36 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Koshy, Thomas <Thomas.Koshy@nrc.gov>; Boyce (RES), Tom <Tom.Boyce@nrc.gov>
Cc: Raynaud, Patrick <Patrick.Raynaud@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

BCs,
The following action is assigned to your branch. Please follow the instructions and complete by Dec. 6 so that I can review before the Dec. 8 due date.

Thanks,
Greg

From: Difrancesco, Nicholas
Sent: Friday, November 17, 2017 3:18 PM
To: Case, Michael <Michael.Case@nrc.gov>; Webber, Kimberly <Kimberly.Webber@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>; Tabatabai, Sarah <Sarah.Tabatabai@nrc.gov>; Cheok, Michael <Michael.Cheok@nrc.gov>; Thomas, Brian <Brian.Thomas@nrc.gov>; Thaggard, Mark <Mark.Thaggard@nrc.gov>; Regan, Christopher <Christopher.Regan@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>
Cc: Mehta, Shivani <Shivani.Mehta@nrc.gov>; Sangimino, Donna-Marie <Donna-Marie.Sangimino@nrc.gov>; Weber, Michael <Michael.Weber@nrc.gov>; Hackett, Edwin <Edwin.Hackett@nrc.gov>; Johnson, Kevin <Kevin.Johnson@nrc.gov>; RidsResPmdaMail Resource

<RidsResPmdaMail.Resource@nrc.gov>
Subject: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

Good Afternoon –

Attached is a first cut at integrating a RES International Strategy incorporating your input.

For this action, division support is appreciated to ensure high-level division/office priorities are corrected reflected and that Country Sheets for 5 of our partners reflect planned collaboration goals.

1. **Attachment 1** – *"RES International Strategy Summary"* provides a high level summary document for use to communicate how RES plans to engage international partners. Please review this list with your Division Management for alignment on priorities and general description of effort. This list is meant to be a high-level document. Track changes are appreciated.
2. **Attachment 2** – "*Country Sheets"* – Please review for accuracy and include any missing items on the Excel sheets. The inputs are organized by 5 pilot countries (Japan, Canada, Germany, South Korea and IRSN). To support bilateral discussions with counter parts – please fully populated fields to inform engagements with these countries.
    - For International Priorities – please use management judgement in setting the priority using insights from the Project Priorization Tool and known benefits from the specific international opportunity.
    - For the last column, "Relevant Policy element from MD 5.13," please see the tab "MD 5.13 Policy Statements" and use the numbers assigned to each element. Please highlight or change the font color of the rows that you edit.

Shared Drive Location - G:\DIROFF\Technical Assistant\International Research Strategy

Please let Shivani or I know if you have any question. Please target completing this review by December 8th.

Much appreciated your efforts in aligning the International Strategy.

Thanks,

Nick

Technical Assistant
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
301-415-1115

From: Frankl, Istvan
Sent: Wed, 6 Dec 2017 21:16:51 +0000
To: Hiser, Matthew
Subject: RE: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

Matt,

Thanks for your inputs and ranking.

Steve

From: Hiser, Matthew
Sent: Wednesday, December 06, 2017 4:03 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

Hi Steve,

I just added inputs on priority and MD 5.13 policy for each of the harvesting line items.

Thanks!
Matt

From: Frankl, Istvan
Sent: Wednesday, December 06, 2017 11:42 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)
Importance: High

Matt,

Thanks for your comments as well.

Do you have any inputs for my item 2 below? Most of the CMB specific items under the country tabs are harvesting related.

Please reply ASAP.

Steve

From: Frankl, Istvan
Sent: Wednesday, December 06, 2017 10:29 AM
To: Focht, Eric <Eric.Focht@nrc.gov>
Subject: RE: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

Thanks, Eric.

Good additions/comments.

Steve

From: Focht, Eric
Sent: Tuesday, December 05, 2017 9:20 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

Steve,

I made some changes to the Word doc (first link).

-Eric

From: Frankl, Istvan
Sent: Tuesday, November 28, 2017 6:27 PM
To: RES_DE_CMB <RESDECMB@nrc.gov>
Subject: FW: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)
Importance: High

Program Leads,

This is the opportunity for you to provide inputs and updates for the CMB specific international efforts/ engagements within the RES International Strategy.

Please review the enclosed request below for details and provide inputs (if any) for the following:

1) RES International Strategy Summary - Please use the link below to review the general description of CMB specific efforts for completeness and alignment on priorities. If an item is missing, please let me know ASAP.

   G:\DE\CMB\RES International Strategy Implementation - CMB.docx

2) Country Sheets – Please use the link below to review for accuracy and include any missing items on the Excel sheets. Please use red fonts for additions/changes. The CMB filtered inputs are organized by 5 pilot countries (Japan, Canada, Germany, South Korea and IRSN). To support bilateral discussions with counter parts, please fully populate the fields to inform engagements with these countries.

   G:\DE\CMB\Follow up Ticket - by country - CMB.xlsx

In your review please consider your relatively recent inputs provided on this subject which can be found here:

G:\DE\CMB\International Strategy info from Staff - CMB.xlsx

Please complete this action by COB Monday, December 4.

Thanks,

Steve

From: Oberson, Greg
Sent: Monday, November 20, 2017 9:36 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Koshy, Thomas <Thomas.Koshy@nrc.gov>; Boyce (RES), Tom <Tom.Boyce@nrc.gov>
Cc: Raynaud, Patrick <Patrick.Raynaud@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

BCs,
The following action is assigned to your branch. Please follow the instructions and complete by Dec. 6 so that I can review before the Dec. 8 due date.

Thanks,
Greg

From: Difrancesco, Nicholas
Sent: Friday, November 17, 2017 3:18 PM
To: Case, Michael <Michael.Case@nrc.gov>; Webber, Kimberly <Kimberly.Webber@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>; Tabatabai, Sarah <Sarah.Tabatabai@nrc.gov>; Cheok, Michael <Michael.Cheok@nrc.gov>; Thomas, Brian <Brian.Thomas@nrc.gov>; Thaggard, Mark <Mark.Thaggard@nrc.gov>; Regan, Christopher <Christopher.Regan@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>
Cc: Mehta, Shivani <Shivani.Mehta@nrc.gov>; Sangimino, Donna-Marie <Donna-Marie.Sangimino@nrc.gov>; Weber, Michael <Michael.Weber@nrc.gov>; Hackett, Edwin <Edwin.Hackett@nrc.gov>; Johnson, Kevin <Kevin.Johnson@nrc.gov>; RidsResPmdaMail Resource <RidsResPmdaMail.Resource@nrc.gov>
Subject: ACTION: International Strategy, Rev 0 (For Division Review by Dec 8)

Good Afternoon –

Attached is a first cut at integrating a RES International Strategy incorporating your input.

For this action, division support is appreciated to ensure high-level division/office priorities are corrected reflected and that Country Sheets for 5 of our partners reflect planned collaboration goals.

1. **Attachment 1** – *"RES International Strategy Summary"* provides a high level summary document for use to communicate how RES plans to engage international partners. Please review this list with your Division Management for alignment on priorities and general description of effort. This list is meant to be a high-level document. Track changes are appreciated.

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    - For the last column, "Relevant Policy element from MD 5.13," please see the tab "MD 5.13 Policy Statements" and use the numbers assigned to each element. Please highlight or change the font color of the rows that you edit.

Shared Drive Location - G:\DIROFF\Technical Assistant\International Research Strategy

Please let Shivani or I know if you have any question. Please target completing this review by December 8th.

Much appreciated your efforts in aligning the International Strategy.

Thanks,

Nick

Technical Assistant
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
301-415-1115

From: Purtscher, Patrick
Sent: Thu, 23 Mar 2017 07:01:01 -0400
To: Hiser, Matthew
Subject: RE: ACTION: IRSN meeting summary

It looks good.

Pat

From: Hiser, Matthew
Sent: Wednesday, March 22, 2017 4:08 PM
To: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: ACTION: IRSN meeting summary

Hi Pat,

Are you OK with this input?

"
Other input for IRSN on harvesting project:

PNNL report will address a systematic approach to prioritize technical data needs for harvesting. It will also discuss lessons learned and past experience from harvesting programs and use insights from previous harvesting programs to provide an approach for planning future harvesting programs. This report is expected to be complete by May 2017.

IRSN is invited to participate in the development of harvesting data needs and the sources of materials database, which were action items 4 and 5 from the workshop.
"

From: Tregoning, Robert
Sent: Wednesday, March 22, 2017 3:33 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: ACTION: IRSN meeting summary

Matt:

Thanks, I think the only other things to provide to IRSN are

1. A short paragraph on the PNNL report deliverable for the harvesting project (steal from SOW).
2. A general idea of when this report will be completed (steal from SOW).
3. An invitation to IRSN to participate in the development of data needs and the sources of materials database.

After this, we should be done with this.

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: Hiser, Matthew
Sent: Wednesday, March 22, 2017 3:23 PM
To: Mehta, Shivani <Shivani.Mehta@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>
Subject: FW: ACTION: IRSN meeting summary

Dear Shivani,

Please find below the action items from the harvesting workshop as shared with workshop participants:

Action Items from Harvesting Workshop

1. Sharing workshop slides (Ahluwalia)
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.

Thanks!
Matt

From: Mehta, Shivani
Sent: Friday, March 17, 2017 3:20 PM
To: Hoxie, Chris <Chris.Hoxie@nrc.gov>; Hudson, Nathanael <Nathanael.Hudson@nrc.gov>; Santiago, Patricia <Patricia.Santiago@nrc.gov>; Lee, Richard <Richard.Lee@nrc.gov>; Bales, Michelle <Michelle.Bales@nrc.gov>; Nove, Carol <Carol.Nove@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Philip, Jacob <Jacob.Philip@nrc.gov>; Salley, MarkHenry <MarkHenry.Salley@nrc.gov>; Hamburger, Kenneth <Kenneth.Hamburger@nrc.gov>; Kanney, Joseph <Joseph.Kanney@nrc.gov>; Kowalczik, Jeff <Jeff.Kowalczik@nrc.gov>; Grant, Jeffery <Jeffery.Grant@nrc.gov>
Cc: Herrity, Thomas <Thomas.Herrity@nrc.gov>; Berrios, Ilka <Ilka.Berrios@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>; Rolf, Joan <Joan.Rolf@nrc.gov>; Sangimino, Donna-Marie <Donna-Marie.Sangimino@nrc.gov>
Subject: ACTION: IRSN meeting summary

Good Afternoon

The draft meeting summary for the IRSN meeting held on Monday, March 13th is attached.

For you topic area: please summarize **both** IRSN's and your presentations. I have them at a very high level now but please feel free to add as much information as you think would be beneficial for the record of the meeting.

Also, please check the Participant list for anyone I may have missed.

Comments/edits are due by **COB March 23rd**

Feel free to reach out if there are any questions

Thanks,
Shivani

Shivani N Mehta, P.E.
International Relations Specialist (Rotation)
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Mail Stop T-10A24
Shivani.Mehta@NRC.gov
301.415.0860 (Desk)
301.415.6671 (FAX)

From: Tregoning, Robert
Sent: Wed, 22 Mar 2017 12:37:34 -0400
To: Hiser, Matthew;Purtscher, Patrick
Subject: RE: ACTION: IRSN meeting summary

Thanks….

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: Wednesday, March 22, 2017 12:36 PM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: ACTION: IRSN meeting summary

Yep, I'll send the workshop actions to the people you mentioned below…

From: Tregoning, Robert
Sent: Wednesday, March 22, 2017 11:09 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: FW: ACTION: IRSN meeting summary

Can I count on you guys to make sure this action is completed? It's easy and should just require sending the information to Shivani in an email with a cc to me, Raj, and Steve.

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: Iyengar, Raj
Sent: Wednesday, March 22, 2017 11:06 AM

To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Nove, Carol <Carol.Nove@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: ACTION: IRSN meeting summary

Rob,

That sounds like a good plan. I agree.

I will make the needed revisions to Shivani's summary and will send that to you for review.

Raj

From: Tregoning, Robert
Sent: Wednesday, March 22, 2017 10:58 AM
To: Iyengar, Raj <Raj.Iyengar@nrc.gov>; Nove, Carol <Carol.Nove@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: ACTION: IRSN meeting summary

Raj:

I have no problems sharing the workshop actions with IRSN but do not plan to share the results. The results, meaning the workshop summary and presentations, are intended primarily for the workshop participants and associated representatives. IRSN was invited to attend and participate in the workshop and chose not to. We can send them the meeting action items by the end of next week (this is easy). We can also ask them at this time if they are interested in developing a harvesting wish list or participate in the group to develop sources of material. Other than this, we should only indicate when we expect the PNNL report on the harvesting project to be completed and encourage them to download that report when it's completed.

Do you agree with this proposal?

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: Iyengar, Raj
Sent: Wednesday, March 22, 2017 10:28 AM
To: Nove, Carol <Carol.Nove@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: FW: ACTION: IRSN meeting summary

Carol/Rob,

I have suggested some edits (see highlighted portion below). Please revise, as needed.

Raj

1. **Integrity of Plant and Structures**
   a. ***Research on Material Ageing (including CASS/DMW collaborative research and Materials Harvesting planning for LTO research)***
   For IRSN: Francois Barré
   For NRC : Raj Iyengar, Carol Nove and Rob Tregoning

   IRSN: No update

   NRC: Update on CASS (dissimilar metal welds)
   Brief summary of Harvesting workshop held at the NRC during the week of March 6, 2017. Resulted in two actions: 1) Create a list of important data needs from harvesting, and 2) develop a database of available harvesting opportunities.

   b. ***Research on Concrete Pathologies (ODOBA)***
   For IRSN: Francois Barré
   For NRC : Jacob Philip

   IRSN: Update on ODOBA

   NRC: Summary of ASR Research to Date

   Action Items :
   — IRSN will re-connect NRC (Carol Nove) with Gerard Cattiaux.
   — IRSN will send ODOBA agreement to NRC for collaboration.
   — NRC to follow up on NDE testing work with IRSN, CEA, and PNNL. (NRC: Upon follow up, NRC found that PNNL had not received any information from CEA. NRC requests IRSN to ensure information is transmitted to PNNL to enable continued activity in this area.)
   — NRC to renew IRSN/RES information exchange on NDE testing. (Due:)
   — NRC will share the actions and results from the Harvesting workshop. (Due:)

From: Mehta, Shivani
Sent: Friday, March 17, 2017 3:20 PM
To: Hoxie, Chris <Chris.Hoxie@nrc.gov>; Hudson, Nathanael <Nathanael.Hudson@nrc.gov>; Santiago, Patricia <Patricia.Santiago@nrc.gov>; Lee, Richard <Richard.Lee@nrc.gov>; Bales, Michelle <Michelle.Bales@nrc.gov>; Nove, Carol <Carol.Nove@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Philip, Jacob <Jacob.Philip@nrc.gov>; Salley,

MarkHenry <MarkHenry.Salley@nrc.gov>; Hamburger, Kenneth <Kenneth.Hamburger@nrc.gov>; Kanney, Joseph <Joseph.Kanney@nrc.gov>; Kowalczik, Jeff <Jeff.Kowalczik@nrc.gov>; Grant, Jeffery <Jeffery.Grant@nrc.gov>
Cc: Herrity, Thomas <Thomas.Herrity@nrc.gov>; Berrios, Ilka <Ilka.Berrios@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>; Rolf, Joan <Joan.Rolf@nrc.gov>; Sangimino, Donna-Marie <Donna-Marie.Sangimino@nrc.gov>
Subject: ACTION: IRSN meeting summary

Good Afternoon

The draft meeting summary for the IRSN meeting held on Monday, March 13th is attached.

For you topic area: please summarize **both** IRSN's and your presentations. I have them at a very high level now but please feel free to add as much information as you think would be beneficial for the record of the meeting.

Also, please check the Participant list for anyone I may have missed.

Comments/edits are due by **COB March 23rd**

Feel free to reach out if there are any questions

Thanks,
Shivani

Shivani N Mehta, P.E.
International Relations Specialist (Rotation)
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Mail Stop T-10A24
Shivani.Mehta@NRC.gov
301.415.0860 (Desk)
301.415.6671 (FAX)

From: Nove, Carol
Sent: Thu, 23 Mar 2017 11:41:00 -0600
To: Iyengar, Raj;Tregoning, Robert
Cc: Hiser, Matthew
Subject: RE: ACTION: IRSN meeting summary

I'm OK with the NDE part (other than the red highlight on the period).

From: Iyengar, Raj
Sent: Thursday, March 23, 2017 1:37 PM
To: Nove, Carol <Carol.Nove@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: ACTION: IRSN meeting summary

All,

Draft DE input to IPT is highlighted below. Please let me know if you have changes.

Raj

Action Items :
— IRSN will re-connect NRC (Carol Nove) with Gerard Cattiaux.
— IRSN will send ODOBA agreement to NRC for collaboration.
NRC to follow up on NDE testing work with IRSN, CEA, and PNNL. (NRC Update: While the agreement included a task for PNNL to collect data with CEA's flexible phased-array ultrasonic probe, this task has been on-hold due to funding limitations. NRC confirmed that PNNL did not receive the flexible array probe from CEA.
— NRC to renew IRSN/RES information exchange on NDE testing. (NRC Update: In light of the expiration date for the current NDE Implementing Agreement (December 31, 2017), NRC proposes to meet with IRSN during the summer 2017 to discuss and plan the scope of the next Agreement.
— NRC will share the actions and results from the Harvesting workshop. (NRC Update: Action items from the meeting provided. An update on NRC initiative on developing a systematic approach to harvesting reactor materials and components is also provided. Please contact Rob Tregoning if IRSN is interested in developing a harvesting wish list or participate in the group to develop sources of material)

From: Iyengar, Raj
Sent: Wednesday, March 22, 2017 10:28 AM
To: Nove, Carol <Carol.Nove@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: FW: ACTION: IRSN meeting summary

Carol/Rob,

I have suggested some edits (see highlighted portion below). Please revise, as needed.

Raj

1. **Integrity of Plant and Structures**
   a. ***Research on Material Ageing (including CASS/DMW collaborative research and Materials Harvesting planning for LTO research)***
   For IRSN: Francois Barré
   For NRC : Raj Iyengar, Carol Nove and Rob Tregoning

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   For IRSN: Francois Barré
   For NRC : Jacob Philip

   IRSN: Update on ODOBA

   NRC: Summary of ASR Research to Date

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   — NRC will share the actions and results from the Harvesting workshop. (Due:)

From: Mehta, Shivani
Sent: Friday, March 17, 2017 3:20 PM
To: Hoxie, Chris <Chris.Hoxie@nrc.gov>; Hudson, Nathanael <Nathanael.Hudson@nrc.gov>; Santiago, Patricia <Patricia.Santiago@nrc.gov>; Lee, Richard <Richard.Lee@nrc.gov>; Bales, Michelle

<Michelle.Bales@nrc.gov>; Nove, Carol <Carol.Nove@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Philip, Jacob <Jacob.Philip@nrc.gov>; Salley, MarkHenry <MarkHenry.Salley@nrc.gov>; Hamburger, Kenneth <Kenneth.Hamburger@nrc.gov>; Kanney, Joseph <Joseph.Kanney@nrc.gov>; Kowalczik, Jeff <Jeff.Kowalczik@nrc.gov>; Grant, Jeffery <Jeffery.Grant@nrc.gov>
Cc: Herrity, Thomas <Thomas.Herrity@nrc.gov>; Berrios, Ilka <Ilka.Berrios@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>; Rolf, Joan <Joan.Rolf@nrc.gov>; Sangimino, Donna-Marie <Donna-Marie.Sangimino@nrc.gov>
Subject: ACTION: IRSN meeting summary

Good Afternoon

The draft meeting summary for the IRSN meeting held on Monday, March 13th is attached.

For you topic area: please summarize **both** IRSN's and your presentations. I have them at a very high level now but please feel free to add as much information as you think would be beneficial for the record of the meeting.

Also, please check the Participant list for anyone I may have missed.

Comments/edits are due by **COB March 23rd**

Feel free to reach out if there are any questions

Thanks,
Shivani

Shivani N Mehta, P.E.
International Relations Specialist (Rotation)
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Mail Stop T-10A24
Shivani.Mehta@NRC.gov
301.415.0860 (Desk)
301.415.6671 (FAX)

From: Moyer, Carol
Sent: Tue, 9 May 2017 19:10:45 +0000
To: Frankl, Istvan
Subject: RE: ACTION: NRC-EPRI meeting - talking points

OK, Steve, I will work on talking points for the LTO topics.

Carol

From: Frankl, Istvan
Sent: Tuesday, May 09, 2017 2:20 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: ACTION: NRC-EPRI meeting - talking points
Importance: High

Carol,

This is another action on a relatively short notice but we already talked about some of the CMB specific LTO topics below. Matt Hiser can provide inputs on the harvesting workshop. If you need assistance from other staff, please let me know.

Please have draft talking points ready for my review by COB Thursday, May 18.

Thanks,

Steve

From: Berrios, Ilka
Sent: Tuesday, May 09, 2017 1:44 PM
To: Iyengar, Raj <Raj.Iyengar@nrc.gov>; Nove, Carol <Carol.Nove@nrc.gov>; Jung, Ian <Ian.Jung@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>
Cc: Martinez Rodriguez, Erick <Erick.MartinezRodriguez@nrc.gov>
Subject: NRC-EPRI meeting - talking points

All,

Attached is the latest agenda for the NRC/EPRI meeting. Please prepare talking points for Brian on the topics below. Please provide your input to Erick by May 23. If you need more time, please let Erick know.

Long Term Operation (LTO) Beyond 60 Years (CMB)

- Progress and Readiness – what remains before submittal of lead SLR application
- Co-sponsorship of public workshop on SLR technical topics and publicly-available documentation on research progress

- Technical reports on Continued Adequacy of RG 1.99
- Highlights of harvesting workshop
- Research priorities for 2017/2018

xLPR and leak-before break (LBB) analyses (CIB)

- Current Status on MOU Development

Digital Instrumentation & Control Collaboration (ICEEB)

- Progress during previous year
- Priorities for 2017/2018

Thanks,

Ilka

415-2404

From: Purtscher, Patrick
Sent: Wed, 4 Apr 2018 12:38:54 +0000
To: Hiser, Matthew;Frankl, Istvan;Audrain, Margaret
Subject: RE: ACTION: Potential Topics for Materials Exchange Meeting May 22-26

I can help prepare, but will be attending a TIP-5 meeting in Canada that week so I won't be there.

Pat

From: Hiser, Matthew
Sent: Tuesday, April 03, 2018 1:56 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Cc: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: ACTION: Potential Topics for Materials Exchange Meeting May 22-26

Hi Steve,

Sure, I could work with Meg and Pat to present the latest on harvesting.

Thanks!
Matt

From: Frankl, Istvan
Sent: Tuesday, April 03, 2018 11:47 AM
To: Audrain, Margaret <Margaret.Audrain@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: ACTION: Potential Topics for Materials Exchange Meeting May 22-26

Meg,

You will have only 10-15 minutes to summarize the topic.

I don't yet have the list of attendees, only the draft initial topics and agenda which I circulated earlier (attached).

Thanks,

Steve

From: Audrain, Margaret
Sent: Tuesday, April 03, 2018 11:33 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: ACTION: Potential Topics for Materials Exchange Meeting May 22-26

Yes, of course, if you think there would be interest. Who's the industry counterparts? I've presented our current research plan/results a few times in the last year at conferences so I wouldn't want to take up too much time over a new topic.

From: Frankl, Istvan
Sent: Tuesday, April 03, 2018 11:28 AM
To: Audrain, Margaret <Margaret.Audrain@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: ACTION: Potential Topics for Materials Exchange Meeting May 22-26
Importance: High

Meg and Matt,

Rob has proposed additional topics for the upcoming materials exchange meeting with industry in late May.

This is a great opportunity to align with industry on harvesting as well as PWSCC CGR. Can you support these topics as RES leads?

Please reply ASAP.

Thanks,

Steve

From: Tregoning, Robert
Sent: Tuesday, April 03, 2018 11:00 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: FW: Potential Topics for Materials Exchange Meeting May 22-26

Steve:

Other potential CMB topics – Steve, I think it would be also good to consider presentations on the following CMB topics:

1. Harvesting – Current plans and activities
2. IAD – confirmatory testing plans
3. PWSCC Crack Growth – Current research plans and results

These don't have to be long presentations. I think the harvesting and IAD ones could be 10 minutes each. The PWSCC one could be 10 – 15 minutes…..

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: Frankl, Istvan
Sent: Monday, April 02, 2018 6:52 PM
To: Iyengar, Raj <Raj.Iyengar@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Rudland, David <David.Rudland@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Ruffin, Steve <Steve.Ruffin@nrc.gov>
Cc: Focht, Eric <Eric.Focht@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: RE: Potential Topics for Materials Exchange Meeting May 22-26

Allen et al.

I would like to propose three more topics from RES/DE:

1) Review of Additive Manufacturing for Reactor Materials and Components - NRC Efforts with RES support – NRO lead: J. Burke, RES lead: A. Hull (Considering the eventual merger of NRR and NRO) (15 mins)
2) Status Update on the PWSCC Initiation Program – Lead: E. Focht (15 mins.)
3) Status of Subsequent License Renewal (SLR) Confirmatory Research – Lead: C. Moyer (10 -15 mins.)

Thanks,

Steve F.

From: Iyengar, Raj
Sent: Friday, March 30, 2018 11:31 AM
To: Hiser, Allen <Allen.Hiser@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Rudland, David <David.Rudland@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Ruffin, Steve <Steve.Ruffin@nrc.gov>
Subject: RE: Potential Topics for Materials Exchange Meeting May 22-26

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Raj

From: Hiser, Allen
Sent: Thursday, March 29, 2018 1:17 PM
To: Alley, David <David.Alley@nrc.gov>; Rudland, David <David.Rudland@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Frankl, Istvan

<Istvan.Frankl@nrc.gov>; Ruffin, Steve <Steve.Ruffin@nrc.gov>
Subject: Potential Topics for Materials Exchange Meeting May 22-26
Importance: High

We need to identify topics for the May 22-24 materials exchange meeting with industry – all day May 22 and 23, until noon on the 24th.

We may have additional meetings with the industry on Monday the 21st (PFM and the RES TLR on exclusion of embrittlement effects with $\Delta T < 25°F$) and the afternoon of Thursday the 24th (RES fluence program status).

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Please identify any additions or deletions by noon on Tuesday (April 3), along with appropriate staff contacts/presenters. .

I would like to get the agenda pinned down with industry by the end of next week.

Allen

From: Frankl, Istvan
Sent: Tue, 3 Apr 2018 18:06:16 +0000
To: Hiser, Matthew
Subject: RE: ACTION: Potential Topics for Materials Exchange Meeting May 22-26

Matt,

Thanks for your quick reply!

Hope you are having lots of fun.

Don't forget that the mid-years are just around the corner, so please schedule one-on-one with me. I will also need inputs from you (and ultimately from your current rotational supervisor).

Steve

From: Hiser, Matthew
Sent: Tuesday, April 03, 2018 1:56 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Cc: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
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Cc: Focht, Eric <Eric.Focht@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>
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Please identify any additions or deletions by noon on Tuesday (April 3), along with appropriate staff contacts/presenters. .

I would like to get the agenda pinned down with industry by the end of next week.

Allen

From: Frankl, Istvan
Sent: Fri, 11 May 2018 19:13:11 +0000
To: Hiser, Matthew
Cc: Moyer, Carol
Subject: RE: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Thanks, Matt.

The revised talking points look good. I will forward them to Greg for management consideration soon.

Steve

From: Hiser, Matthew
Sent: Friday, May 11, 2018 12:21 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Cc: Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: RE: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Hi Steve,

Sure, text added in red below to capture my response to your question.

Thanks!
Matt

From: Frankl, Istvan
Sent: Friday, May 11, 2018 11:32 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: RE: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting
Importance: High

Thanks, Matt.

Please let me know if your response below and the latest info on Halden impact your draft talking points below which Brian has not seen yet.

Steve

From: Hiser, Matthew
Sent: Thursday, May 10, 2018 1:44 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Hi Steve,

I would not propose a new MOU addenda for these areas (we already have cooperative agreements for the Zorita testing), but would suggest informal coordination and dialogue on both topics that could be formalized through MOU addenda or cooperative agreements for any specific research activities that result.

For example, we would compare harvesting priorities and if there are good synergies, we would seek a formal mechanism for cooperation on the specific project being pursued. Similarly for the test reactor and irradiated materials testing capabilities…

Thanks!
Matt

From: Frankl, Istvan
Sent: Tuesday, May 08, 2018 3:22 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Thanks, Matt.

These are well-crafted talking points for the intended audience.

Assuming that EPRI's feedback during the meeting is that yes, they are interested in further engagement and leveraging in these areas, what would be the next step? Drafting of addenda to the existing MOU, a new MOU or some other vehicle?

Steve

From: Hiser, Matthew
Sent: Tuesday, May 08, 2018 2:55 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>
Cc: Harris, Brian <Brian.Harris2@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Rao, Appajosula <Appajosula.Rao@nrc.gov>
Subject: RE: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Hi Steve,

Per our discussion this morning, I am sharing draft talking points for two potential topics for the EPRI/NRC MOU meeting. Others on this email can please feel free to add their thoughts and input as well.

1. Ex-Plant Materials Harvesting

a. NRC and EPRI have cooperated effectively on several materials harvesting programs, including the reactor internals from Zorita. NRC hosted an ex-plant materials harvesting workshop in March 2017 that was attended by EPRI, DOE and international parties,

which provided valuable insights and feedback on best practices and lessons learned from past harvesting efforts.

b. NRC is prioritizing data needs for harvesting and collecting information on available sources of materials (including operating and decommissioning plants as well as previously harvested materials) to ensure the best value for research on harvested materials.
c. NRC is interested in engaging with EPRI on their priorities for harvesting and how to achieve the best value in pursuing harvesting opportunities, including leveraging and cooperation.
d. If EPRI and NRC management are aligned, informal coordination and dialogue will be pursued that could be formalized through MOU addenda or cooperative agreements for any specific research activities that result.

2. Test Reactors and Irradiated Materials Testing

a. NRC is performing a strategic review of options for test reactor irradiation and irradiated materials testing capabilities, particularly in light of the potential shutdown of the Halden Reactor.
b. NRC and EPRI cooperation on the Zorita materials research has been effective for leveraging resource-intensive testing of highly irradiated reactor internals materials.
c. NRC is interested in further opportunities for leveraging and cooperation with EPRI for test reactor irradiation and irradiated materials testing capabilities, particularly if currently planned efforts at Halden are not able to be completed.
d. If EPRI and NRC management are aligned, informal coordination and dialogue will be pursued that could be formalized through MOU addenda or cooperative agreements for any specific research activities that result.

Thanks!
Matt

From: Frankl, Istvan
Sent: Tuesday, May 01, 2018 2:36 PM
To: Oberson, Greg <Greg.Oberson@nrc.gov>
Cc: Harris, Brian <Brian.Harris2@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting
Importance: High

Greg,

We are proposing to add "Ex-Plant Materials Harvesting" to the agenda for subject management meeting.

Both Rob and Pat recommend that adding this topic could be advantageous for achieving a more guided approach for identifying plants more suited for long term data analysis pertinent to the agency. EPRI could also assist in identifying international plants.

If Brian/Chris is OK with the recommendation, we will prepare talking points for this.

Thanks,

Steve

From: Regan, Christopher
Sent: Wednesday, April 18, 2018 2:26 PM
To: Thomas, Brian <Brian.Thomas@nrc.gov>
Cc: Seber, Dogan <Dogan.Seber@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Boyce (RES), Tom <Tom.Boyce@nrc.gov>; Jenkins, Ronaldo <Ronaldo.Jenkins@nrc.gov>
Subject: RE: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Brian,
While in my office brainstorming and offering his perspectives of the meeting – for my learning benefit he offered several potential areas to consider proposing….at our discretion of course. These included:

- Any potential new LTO work
- Cyber
- Digital I&C
- Any work in the area of ANLWR's (materials?)
- Determining when is the right time to sunset work
- With a forward focus, what's on the horizon for advancements in NDE
- What does EPRI see in the way of work/topics 5+years out

Food for thought.
Regards,
Chris

(b)(6)

PS: I stripped out Ronaldo's non-NRC email (Ronaldo Jenkins [redacted] from this email thread

---

From: Thomas, Brian
Sent: Wednesday, April 18, 2018 2:14 PM
To: Regan, Christopher <Christopher.Regan@nrc.gov>
Cc: Ronaldo Jenkins <RVJ@Exchange.EXPO>; Seber, Dogan <Dogan.Seber@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Boyce (RES), Tom <Tom.Boyce@nrc.gov>
Subject: Re: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Chris,

In my opinion there are no topics at this time which should be brought to management attention, however, I am interested in what the BCs think so I will reserve my judgement pending my review of what is put forth.

Brian

On: 17 April 2018 17:44,
"Regan, Christopher" <Christopher.Regan@nrc.gov> wrote:

Gentlemen,

A little bit more guidance after speaking with M. Weber that may help you with your input and ideas:

- Keep the suggested topics high level (this is a management meeting)
- Be thinking of topics "strategic" in nature
- Be forward focused – if we've tread the ground before, no need to do it again. My understanding the meeting does not serve as a status update meeting.

Regards,
Chris

From: Oberson, Greg
Sent: Tuesday, April 17, 2018 5:09 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Boyce (RES), Tom <Tom.Boyce@nrc.gov>; Jenkins, Ronaldo <Ronaldo.Jenkins@nrc.gov>; Ake, Jon <Jon.Ake@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>
Cc: Thomas, Brian <Brian.Thomas@nrc.gov>; Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: ACTION: Propose topics for Annual NRC/EPRI MOU review meeting

Hello,
You action is to propose agenda topics for the May 30 meeting. Please submit to me by May 3 so that divison management can review prior to the May 9 due date.

Thanks.

From: Difrancesco, Nicholas
Sent: Thursday, April 12, 2018 1:18 PM
To: Case, Michael <Michael.Case@nrc.gov>; Thomas, Brian <Brian.Thomas@nrc.gov>; Cheok, Michael <Michael.Cheok@nrc.gov>; Webber, Kimberly <Kimberly.Webber@nrc.gov>; Thaggard, Mark <Mark.Thaggard@nrc.gov>; Regan, Christopher <Christopher.Regan@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>; Tabatabai, Sarah <Sarah.Tabatabai@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>
Cc: Weber, Michael <Michael.Weber@nrc.gov>; Hackett, Edwin <Edwin.Hackett@nrc.gov>; Araguas, Christian <Christian.Araguas@nrc.gov>; Johnson, Kevin <Kevin.Johnson@nrc.gov>
Subject: Ticket: EPRI Agenda Topics for May 30 (due May 9)

Folks,

We are confirmed for the NRC/EPRI Annual Meeting on Wednesday May 30.

Request

As with prior EPRI meeting, agenda topics should be focused on the development of forward looking goals and objectives. Additionally, please identifying activities that could benefit from management attention and alignment on resolution.

Draft Agenda for Markup of Agenda Topics –

<< File: EPRI NRC Meeting - Actions Rev2.0 for EPRI Review.docx >>

FYI. This template has incorporated placeholders for the EPRI proposed topics from our prior call (EPRI topics listed below).

Kevin please ticket with due date of May 9. "Identification of Agenda Topics for EPRI NRC Annual Meeting"

Background

Prior Agendas and Summaries for Awareness:

Summary of February 28, 2018 Teleconference -

<< File: EPRI_NRC_AnnualMeetingAgenda_060517.pdf >>

Agenda and Summary of June 5 and 6, 2017 Annual Meeting -

<< File: Summary of NRC and EPRI Meeting on February 28 2018.docx >> << File: EPRI - NRC May 30 2018 Agenda R0.docx >>

EPRI Suggested Topics from February 28, 2018 call

EPRI – Potential Topics for the Annual Meeting

- ATF Updates and Strategies review
- Codes Strategies review
- NRC Transformation
- Big Data and AI use cases

Thanks,

Nick

Technical Assistant
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
301-415-1115

From: Moyer, Carol
Sent: Mon, 25 Sep 2017 17:35:18 -0400
To: Hiser, Matthew
Subject: RE: ACTION: RIC posters

Good night, Matt! ☺

From: Hiser, Matthew
Sent: Monday, September 25, 2017 5:33 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: ACTION: RIC posters

Thank you ☺

From: Moyer, Carol
Sent: Monday, September 25, 2017 5:33 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: ACTION: RIC posters

Agreed!

From: Hiser, Matthew
Sent: Monday, September 25, 2017 5:31 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: ACTION: RIC posters

OK, I just think the urgency is we need to get it finalized (ie approved by Brian and Steve) this week to accommodate the lead time for poster printing (2-3 weeks)

From: Hiser, Matthew
Sent: Monday, September 25, 2017 5:30 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: ACTION: RIC posters

LOL, it's 11:30 here, I'm about to crash!

From: Moyer, Carol
Sent: Monday, September 25, 2017 5:29 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: ACTION: RIC posters

Amy and I were both in meetings much of the day. We still promise to give suggestions on the PLiM poster soon, though.

Isn't it the middle of the night where you are? Insomnia??

From: Hiser, Matthew
Sent: Monday, September 25, 2017 5:27 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: ACTION: RIC posters

Looks good to me! Any update on reviewing / finalizing PLiM poster?

From: Moyer, Carol
Sent: Monday, September 25, 2017 4:32 PM
To: Hull, Amy <Amy.Hull@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: ACTION: RIC posters

Amy,

I drafted the attached Harvesting abstract. It is much easier to do after the poster is already done! Can you take a look and make suggestions, please?

Thank you,
Carol

From: Frankl, Istvan
Sent: Monday, September 25, 2017 2:45 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Cc: Hull, Amy <Amy.Hull@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: ACTION: RIC posters
Importance: High

Carol,

As discussed, we need a proposal for a RIC poster on harvesting by noon tomorrow. Matt is on travel, so please work with Amy.

Please use the attached poster for AM as template.

Thanks,

Steve

From: Focht, Eric
Sent: Monday, September 25, 2017 8:33 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Cc: Oberson, Greg <Greg.Oberson@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Rao, Appajosula <Appajosula.Rao@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: ACTION: RIC posters

FYI, I created a folder on the G: drive for this RIC: G:\DE\CMB\RIC\RIC 2017

-Eric

From: Frankl, Istvan
Sent: Friday, September 22, 2017 3:35 PM
To: Rao, Appajosula <Appajosula.Rao@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Focht, Eric <Eric.Focht@nrc.gov>
Cc: Oberson, Greg <Greg.Oberson@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: ACTION: RIC posters
Importance: High

All,

Additional posters are needed for the RIC. Brian recommended that we prepare posters for IAD and PWSCC (CGR and Initiation).

Please send me a short description as per the enclosed template by noon Tuesday (I will be in training on Wednesday).

Thanks,

Steve

From: Thomas, Brian
Sent: Friday, September 22, 2017 2:44 PM
To: Oberson, Greg <Greg.Oberson@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Boyce, Tom <Tom.Boyce@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Koshy, Thomas <Thomas.Koshy@nrc.gov>
Cc: Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: Re: RIC posters

Ok. Let's target the popular stuff:

IAD
PWSSC
CONCRETE, ASR, SCC MODULES;
xLPR

On: 22 September 2017 14:10, "Oberson, Greg" <Greg.Oberson@nrc.gov> wrote:
Hello,
Mike Weber wants RES to propose 4 to 6 more posters for RIC. We have only put forth one idea so far, so we should aim for two more for our division. Please thnk about it and let me know ideas by Wednesday.

Greg

Note to requester: Attachments are immediately following.

From: Moyer, Carol
Sent: Mon, 25 Sep 2017 20:32:01 +0000
To: Hull, Amy
Cc: Hiser, Matthew
Subject: RE: ACTION: RIC posters
Attachments: Harvesting NRC Poster for PLiM.PPTX, Harvesting poster abstract_cem.docx

Amy,

I drafted the attached Harvesting abstract. It is much easier to do after the poster is already done! Can you take a look and make suggestions, please?

Thank you,
Carol

From: Frankl, Istvan
Sent: Monday, September 25, 2017 2:45 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Cc: Hull, Amy <Amy.Hull@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: ACTION: RIC posters
Importance: High

Carol,

As discussed, we need a proposal for a RIC poster on harvesting by noon tomorrow. Matt is on travel, so please work with Amy.

Please use the attached poster for AM as template.

Thanks,

Steve

From: Focht, Eric
Sent: Monday, September 25, 2017 8:33 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Cc: Oberson, Greg <Greg.Oberson@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Rao, Appajosula <Appajosula.Rao@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: ACTION: RIC posters

FYI, I created a folder on the G: drive for this RIC: G:\DE\CMB\RIC\RIC 2017

-Eric

From: Frankl, Istvan
Sent: Friday, September 22, 2017 3:35 PM

To: Rao, Appajosula <Appajosula.Rao@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Focht, Eric <Eric.Focht@nrc.gov>
Cc: Oberson, Greg <Greg.Oberson@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: ACTION: RIC posters
Importance: High

All,

Additional posters are needed for the RIC. Brian recommended that we prepare posters for IAD and PWSCC (CGR and Initiation).

Please send me a short description as per the enclosed template by noon Tuesday (I will be in training on Wednesday).

Thanks,

Steve

From: Thomas, Brian
Sent: Friday, September 22, 2017 2:44 PM
To: Oberson, Greg <Greg.Oberson@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Boyce, Tom <Tom.Boyce@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Miller, Kenneth A <KennethA.Miller@nrc.gov>; Koshy, Thomas <Thomas.Koshy@nrc.gov>
Cc: Regan, Christopher <Christopher.Regan@nrc.gov>
Subject: Re: RIC posters

Ok. Let's target the popular stuff:

IAD
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CONCRETE, ASR, SCC MODULES;
xLPR

On: 22 September 2017 14:10, "Oberson, Greg" <Greg.Oberson@nrc.gov> wrote:
Hello,
Mike Weber wants RES to propose 4 to 6 more posters for RIC. We have only put forth one idea so far, so we should aim for two more for our division. Please thnk about it and let me know ideas by Wednesday.

Greg

Harvesting of Aged Materials from Operating and Decommissioning Nuclear Power Plants

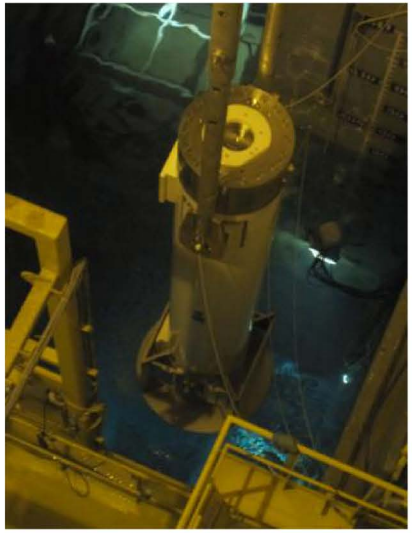
M. Hiser[a], P. Purtscher[a], P. Ramuhalli[b], A. B. Hull[a], R. Tregoning[a], and C. E. Moyer[a]
[a]U.S. Nuclear Regulatory Commission (NRC), Washington, D.C., USA
[b]Pacific Northwest National Laboratory (PNNL), Richland, WA, USA

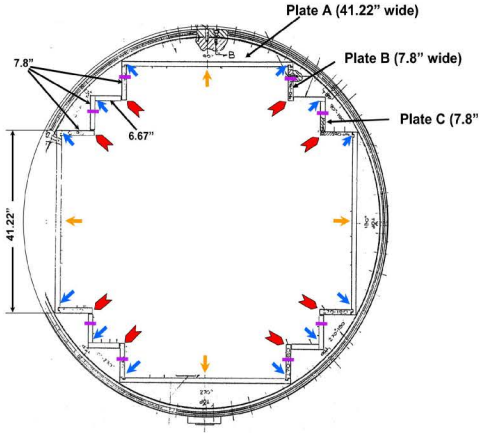
Background and Motivation

- Recent developments in the nuclear industry include stronger interest in extended plant operation and plans to shut down a number of nuclear power plants (NPPs) In the U.S., there is strong interest in extending NPP lifespans through subsequent license renewal (SLR) from 60 to 80 years.
- Extended plant operation and SLR raise a number of technical issues that may require further research to understand aging mechanisms. U.S. utilities and the U.S. Nuclear Regulatory Commission (NRC) have focused on the aging of systems, structures, and components and in particular four key SLR issues: reactor pressure vessel (RPV) embrittlement, irradiation-assisted stress corrosion cracking of reactor internals, concrete structures and containment degradation, and electrical cable qualification and condition assessment.
- Meanwhile, in recent years, a number of NPPs, both in the U.S. and internationally, have shut down or announced plans to shut down for various reasons, including economic, political, and technical challenges. Unlike in the past when there were very few plants shutting down, these new developments provide opportunities for harvesting components that were aged in representative light water reactor (LWR) environments.
- In a third related development, economic challenges and limited budgets have restricted the resources available to support new research, including harvesting programs. Given this constrained budget environment, aligning interests and leveraging with other organizations is important to allow maximum benefit and value for future research programs.

Current Activities

- NRC has recently undertaken an effort, with the assistance of Pacific Northwest National Lab (PNNL), to develop a strategic approach for harvesting aged materials from NPPs. Due to limited opportunities, past harvesting efforts have been reactive to individual plants shutting down and beginning decommissioning. Given the expected availability of materials from numerous plants and anticipated research needs to better understand aging out to 80 years of operation, the NRC is pursuing a more proactive approach to prioritize the data needs best addressed by harvesting and identify the best sources of materials to address high-priority data needs for regulatory research.
- The first step in this strategic approach is to prioritize data needs for harvesting. A data need describes a particular degradation scenario (combination of material and environment) and should be defined with as much detail as appropriate in terms of the material (alloy, composition, etc.) and environment (temperature, fluence, chemistry, etc.).





Potential Criteria for Harvesting Prioritization

A number of criteria may be considered when prioritizing the data needs for harvesting, including:

- Applicability of harvested material for addressing critical gaps
  - Harvesting for critical gaps prioritized over less essential technical gaps.
- Ease of laboratory replication of the degradation scenario
  - For example, simultaneous thermal and irradiation conditions are difficult to replicate or accelerated aging may not be feasible for a mechanism sensitive to dose rate.
- Unique field aspects of degradation
  - For example, unusual operating experience or legacy materials (fabrication methods, etc.) no longer available.
- Fleet-wide vs. plant-specific applicability of data
  - Greater value in addressing an issue applicable to a larger number of plants.
- Harvesting cost and complexity
  - For example, harvesting unirradiated concrete or electrical cables less expensive and less complex than harvesting from the reactor internals or RPV.
- Availability of reliable in-service inspection (ISI) techniques for the material / component
  - If mature inspection methods exist and are easy to apply, harvesting may be less valuable.
- Availability of materials for harvesting
- Timeliness of the expected research results relative to the objective.
- The above potential criteria provide a systematic approach to prioritize data needs for harvesting. Different organizations may weigh and consider each of these criteria differently based on their interests and perspectives, but each criteria is likely relevant to some degree for any organization. NRC is interested in engaging with other organizations to prioritize data needs for harvesting and identify areas of common interest.

Harvesting Database

- Another activity NRC is pursuing is the potential development of a database for sources of materials for harvesting, which could include both previously harvested materials and those available for future harvesting. This database would allow for aligning of high-priority data needs to the available sources of materials. As with the data needs effort, the level of detail for the sources of materials database should be appropriate for the factors influencing decision-making. NRC is interested in engaging with other organizations to develop a database for sources of materials for harvesting.

Path Forward

- NRC's experience is that harvesting can yield highly representative and valuable data on materials aging, but these efforts may be expensive and challenging. Having a clearly defined objective and early engagement with other stakeholders, including the NPP from which harvesting will take place, are key to success. As specific harvesting opportunities are identified through this strategic approach, the NRC welcomes opportunities for cooperation and leveraging resources with other interested research organizations.

TECHNICAL POSTER/TABLETOP PRESENTATION TOPIC AND DESCRIPTION

Poster/Tabletop Title:

Harvesting of Aged Materials from Operating and Decommissioning Nuclear Power Plants

Poster/Tabletop Topic and Description:

In the U.S. nuclear industry today, there are some nuclear power plants (NPPs) that are prematurely ceasing operation, while other plant operators are making plans to extend operating lifespans through subsequent license renewal (SLR) from 60 to 80 years. Extending plant operation raises technical issues that may require further research on aging mechanisms to reduce uncertainties associated with material performance. Decommissioning plants provide opportunities for harvesting components that have been aged in representative light water reactor (LWR) environments.

The NRC has recently undertaken an effort, with the assistance of Pacific Northwest National Laboratory (PNNL), to develop a strategic approach to harvesting aged materials from NPPs. The work will identify criteria to consider when prioritizing the data needs for harvesting. The NRC is interested in engaging with other organizations to prioritize data needs for harvesting, to share information about harvested materials and those that may become available, and to identify areas of common interest. The poster will give an overview of NRC findings and recommendations related to harvesting of components and material specimens from operating nuclear power plants and those undergoing decommissioning.

Poster/Tabletop Presenter:

- Matthew Hiser, Materials Engineer, RES/DE/CMB, phone: 301-415-2454, email: Matthew.Hiser@nrc.gov

From: Frankl, Istvan
Sent: Thu, 20 Apr 2017 16:20:21 -0400
To: Tregoning, Robert;Hiser, Matthew
Cc: Moyer, Carol
Subject: RE: ACTION: Update - Check and Adjust: EPRI Working Agenda for June 5 and 6 (Comments due April 21)

Rob,

Agreed. I was only aware of future plans but that is not the scope of the briefing.

We are still editing the talking points which are due to DLR by noon Monday. I am currently reviewing the draft I got this morning and will forward it to you for review soon.

Thanks,

Steve

From: Tregoning, Robert
Sent: Thursday, April 20, 2017 4:11 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: RE: ACTION: Update - Check and Adjust: EPRI Working Agenda for June 5 and 6 (Comments due April 21)

I'm confused. I know what additional irradiation is being done at Halden, but what additional irradiation are we doing at DOE labs? If Brian's planning on saying this, we need to make sure it's accurate.

RT

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: Frankl, Istvan
Sent: Thursday, April 20, 2017 4:08 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Moyer, Carol <Carol.Moyer@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>

Subject: RE: ACTION: Update - Check and Adjust: EPRI Working Agenda for June 5 and 6 (Comments due April 21)
Importance: High

Thanks, Matt.

In our upcoming briefing of the Commission Brian will mention that "Materials removed from decommissioned plants are being tested and subjected to additional irradiation at DOE national laboratories and at the Halden reactor to confirm the current understanding of the aging effects. The NRC is collaborating with EPRI and with international regulators to obtain data on irradiation-assisted degradation representative of materials at the end of the SLR period."

Would the NRC-EPRI management meeting be a good opportunity to "push" for more collaboration/leveraging with EPRI LTO in ex-pant materials harvesting and further irradiation to representative exposures/dpas associated with 80 years of operation? Please align with Rob on this.

Steve

From: Hiser, Matthew
Sent: Thursday, April 20, 2017 1:37 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Cc: Moyer, Carol <Carol.Moyer@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: RE: ACTION: Update - Check and Adjust: EPRI Working Agenda for June 5 and 6 (Comments due April 21)

Hi Steve,

I think IAD could fall as a subtopic under Research Priorities in 2017/2018.

I don't think we need to propose a sub-topic on collaboration for further irradiation of internals in the "Strategic Areas and Future Collaboration" section. I think we have good dialogue on that topic through our Zorita agreements.

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

From: Frankl, Istvan
Sent: Thursday, April 20, 2017 1:27 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Moyer, Carol <Carol.Moyer@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: ACTION: Update - Check and Adjust: EPRI Working Agenda for June 5 and 6 (Comments due

April 21)
Importance: High

Matt,

Brian requested input for the upcoming rescheduled EPRI – NRC management meeting. The attached draft agenda already has harvesting under LTO Beyond 60 Years as one of the topics that Brian will present. Should we have a separate IAD topic on RVIs or should regulatory research on IAD be folded in sub-topic on Research priorities for 2017/2018?

There is also a main topic on Strategic Areas and Areas for Future Collaboration in the agenda. Should we propose sub-topic on collaboration for further irradiation of internals, etc.?

Please reply ASAP. (Our acting TA requested BC input by COB today.)

Carol,

Please coordinate the CMB inputs supporting subject meeting as soon as you are back from official travel.

Thanks,

Steve

From: Martinez Rodriguez, Erick
Sent: Thursday, April 20, 2017 12:26 PM
To: Jung, Ian <Ian.Jung@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Boyce, Tom <Tom.Boyce@nrc.gov>
Subject: RE: Update - Check and Adjust: EPRI Working Agenda for June 5 and 6 (Comments due April 21)

BCs,

Just a follow-up for comments on the EPRI agenda. Brian mentioned earlier this week (on Monday) of the action to review and provide comments on the EPRI agenda (attached).

Please let me know if you have comments by COB today. I will put them together and share them with Brian tomorrow (feel free to coordinate with him, that way he is already aware of any changes) before sending them to the FO.

Thanks.

From: Difrancesco, Nicholas
Sent: Tuesday, April 11, 2017 2:42 PM
To: Aird, David <David.Aird@nrc.gov>; Martinez Rodriguez, Erick <Erick.MartinezRodriguez@nrc.gov>; Algama, Don <Don.Algama@nrc.gov>; Bales, Michelle <Michelle.Bales@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>
Cc: Weber, Michael <Michael.Weber@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Nakoski, John <John.Nakoski@nrc.gov>; Thomas, Brian <Brian.Thomas@nrc.gov>; Cheok, Michael

<Michael.Cheok@nrc.gov>; Case, Michael <Michael.Case@nrc.gov>; Thaggard, Mark <Mark.Thaggard@nrc.gov>; Webber, Kimberly <Kimberly.Webber@nrc.gov>
Subject: Update - Check and Adjust: EPRI Working Agenda for June 5 and 6 (Comments due April 18)

Folks,

Attached are EPRI proposed changes to the agenda for June 5 and 6. Please provide comments against EPRI's Rev 1.

As noted below, EPRI has made changes to support a more strategic discussion on efficiencies.

Appreciate division comments by COB April ~~18~~21.

Many thanks,
Nick

From: Canavan, Ken [mailto:kcanavan@epri.com]
Sent: Tuesday, April 11, 2017 11:27 AM
To: Difrancesco, Nicholas <Nicholas.DiFrancesco@nrc.gov>
Subject: [External_Sender] RE: RE: Checking-in: Updated Agenda and Planning Timeline for June 5 and 6

Nick:

I have solicited input from the EPRI senior leadership team. Attached is a some suggested revisions and thoughts for the agenda. We would like the agenda and meeting to become more strategic and less focus on status of what we are currently doing. Of particular interest from the EPRI side is how do we become more efficient in R&D space. Can we do more than cooperate or collaborate? Perhaps some integration on key research. In some cases are we doing too much or seeking too much precision on an activity that does not require or warrant it. Let me know your thoughts and we can have another iteration. Thanks!

Ken Canavan
Director, Plant Technology
Electric Power Research Institute
1300 West WT Harris Blvd | Charlotte NC 28262-2867
Office No.: 704-595-2731 | Mobile: 704-307-8842
Assistant: Morgan Saucier, msaucier@epr.com, 704-595-2466

From: Difrancesco, Nicholas
Sent: Wednesday, April 05, 2017 4:32 PM
To: Herrity, Thomas <Thomas.Herrity@nrc.gov>; Berrios, Ilka <Ilka.Berrios@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>
Cc: Weber, Michael <Michael.Weber@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Bales, Michelle <Michelle.Bales@nrc.gov>; Martinez Rodriguez, Erick <Erick.MartinezRodriguez@nrc.gov>; Algama, Don <Don.Algama@nrc.gov>; Aird, David <David.Aird@nrc.gov>; Nakoski, John <John.Nakoski@nrc.gov>; Thomas, Brian <Brian.Thomas@nrc.gov>; Cheok, Michael <Michael.Cheok@nrc.gov>; Case, Michael

<Michael.Case@nrc.gov>; Thaggard, Mark <Mark.Thaggard@nrc.gov>; Webber, Kimberly <Kimberly.Webber@nrc.gov>
Subject: Check and Adjust: EPRI Working Agenda for June 5 and 6

Folks,

Please take a look at the draft EPRI / NRC agenda for June 5 and 6 and let me know if you would like to make any adjustments. EPRI is performing a similar review of the agenda in parallel.

Appreciate comments by COB April 18. After alignment with EPRI on the agenda, please plan for development of talking bullets by May 5.

Thanks,

Nick

Technical Assistant
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
301-415-1115

From: Cruz Perez, Zahira
Sent: Mon, 2 Jul 2018 19:05:21 +0000
To: Hiser, Matthew
Cc: Purtscher, Patrick;Frankl, Istvan;Tregoning, Robert
Subject: RE: Aging Management Research Project

Yes, and we did mentioned that we hope that Oyster Creek participate in this program (but it will depend on the licensee).

From: Hiser, Matthew
Sent: Monday, July 02, 2018 3:04 PM
To: Cruz Perez, Zahira <Zahira.CruzPerez@nrc.gov>
Cc: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: RE: Aging Management Research Project

Thanks Zahira. Did they seem satisfied with the answer that was provided?

From: Cruz Perez, Zahira
Sent: Monday, July 02, 2018 3:02 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Aging Management Research Project

Thanks for the answer, one person did asked about this (Paul Gunter). I'll keep you posted.

We are having a public meeting on July 17th…I won't be surprise if they ask again.

From: Hiser, Matthew
Sent: Monday, July 02, 2018 11:21 AM
To: Cruz Perez, Zahira <Zahira.CruzPerez@nrc.gov>
Cc: Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Aging Management Research Project

Hi Zahira,

I am doing well! I can't believe it's only been two months since the Transformation Team ended…

I spoke with Neil Sheehan about this a bit back in April. Basically, we have a project to look at harvesting materials from any decommissioning plant (including Oyster Creek) to help further our understanding of materials degradation. However, NRC has a limited research budget and generally cooperates with DOE or EPRI to perform harvesting programs, which tend to be complex and expensive. We are in the process of identifying our highest priorities for harvesting and gathering information on what materials are available and what other research organizations would be interested in pursuing. It is not likely NRC would undertake a harvesting program alone due to cost, but more likely would happen in cooperation with other research organizations such as DOE or EPRI. NRC is also looking broadly at materials and

designs of most relevance to the operating fleet from all decommissioning plants, of which Oyster Creek is just one.

(b)(6)

Feel free to give me a call at [redacted] to discuss a little more and make sure I'm giving you the information you need for this meeting this afternoon.

Thanks!
Matt

From: Cruz Perez, Zahira
Sent: Monday, July 02, 2018 11:00 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: Aging Management Research Project

Hi Matt,

I hope this message finds you well. I'm having a public webinar this afternoon on the decommissioning of Oyster Creek and I know that there may be a question on the aging management project that we discussed some time ago (in April).

I wanted to know the status of that project. Can you provide me with an update…

Thanks,

Zahira

Note to requester: Attachment is immediately following.

From: Hull, Amy
Sent: Mon, 12 Mar 2018 12:54:20 +0000
To: Tregoning, Robert;Purtscher, Patrick;Audrain, Margaret;Hiser, Matthew
Cc: Moyer, Carol;Frankl, Istvan
Subject: RE: AM and Harvesting, Posters 15 & 7: RIC EPOSTERS AND DIGITAL PRESENTER GUIDANCE - NEXT STEPS
Attachments: draft Harvesting RIC18 Poster Feedback Questionnaire.doc

Steve suggested I also prepare a draft questionnaire for harvesting. Please let me know by COB today if there are any changes you want made. Thanks, Amy

---

From: Hull, Amy
Sent: Thursday, March 08, 2018 12:21 PM
To: Burke, John (John.Burke@nrc.gov) <John.Burke@nrc.gov>; Herrity, Thomas <Thomas.Herrity@nrc.gov>; Harris, Brian <Brian.Harris2@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Cc: Moyer, Carol <Carol.Moyer@nrc.gov>; Frankl, Istvan (Istvan.Frankl@nrc.gov) <Istvan.Frankl@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: AM and Harvesting, Posters 15 & 7: RIC EPOSTERS AND DIGITAL PRESENTER GUIDANCE - NEXT STEPS
Importance: High

We have scheduling completed for staffing (see attached). For additive manufacturing poster staffing, I have the following suggestions for consideration to help us get information about what industry is doing –

(1) Have along your business cards and try to get a business card from your visitor (if you need extra card stock, I have some in my workspace)
(2) Engage your visitor with topics on the draft questionnaire and try to complete for each visitor (attached draft)
(3) I will make extra small copies of the poster for visitor to take along if interested
(4) If nothing else, please try to get the name and affiliation of visitor (attached draft).

If you have comments on the attached drafts or other suggestions on how to make the most of our time next week, please let us know.

Thanks for your participation in this,
Amy

From: Warren, Brenett
Sent: Monday, March 05, 2018 1:55 PM
To: Bridge, Joanna <Joanna.Bridge@nrc.gov>; Mendiola, Mary <Mary.Mendiola@nrc.gov>; Zuberi, Sardar <Sardar.Zuberi@nrc.gov>; Dembek, Stephen <Stephen.Dembek@nrc.gov>; Yadav, Priya <Priya.Yadav@nrc.gov>; Kenny, Caylee <Caylee.Kenny@nrc.gov>; Sturzebecher, Karl

<Karl.Sturzebecher@nrc.gov>; Bernardo, Robert <Robert.Bernardo@nrc.gov>; Wilson, Joshua <Joshua.Wilson@nrc.gov>; Hall, Victor <Victor.Hall@nrc.gov>; Couret, Ivonne <Ivonne.Couret@nrc.gov>; West, Stephanie <Stephanie.West@nrc.gov>; Savoy, Joanne <Joanne.Savoy@nrc.gov>; King, Shannon <Shannon.King@nrc.gov>; Ralph, Melissa <Melissa.Ralph@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Steger, Christine <Christine.Steger@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>; Gifford, Ian <Ian.Gifford@nrc.gov>; Smith, Todd <Todd.Smith@nrc.gov>; Howells, Christopher <Christopher.Howells@nrc.gov>; Orf, Tracy <Tracy.Orf@nrc.gov>; Cruz, Holly <Holly.Cruz@nrc.gov>; Morey, Dennis <Dennis.Morey@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Bowman, Gregory <Gregory.Bowman@nrc.gov>
Cc: RICMST Resource <RICMST.Resource@nrc.gov>; Kipfer, Lorna <Lorna.Kipfer@nrc.gov>
Subject: RIC EPOSTERS AND DIGITAL PRESENTER GUIDANCE - NEXT STEPS
Importance: High

Good Afternoon Poster Presenters,

We are 1 week from RIC 2018 and I want to provide you with a few details to assist:

EPOSTER AND DIGITAL PRESENTATION SCHEDULE

- ePoster and Digital Presenters should be present at the RIC. Although your poster may be set on a continuous run/feed there should be a person present to discuss the poster and to field questions from the attendee viewing the slide presentation March 13 – 15, 2018.

- Refer to Program Agenda on the RIC website at https://ric.nrc.gov/agenda for the full schedule of the RIC. Recommended times for visual presence should be during the following:

Tuesday:

7:30 a.m. – 8:30 a.m.	Meet and Greet – Networking Opportunity
8:30 a.m. – 10:00 a.m.	Opening Sessions
10:00 a.m. – 10:30 a.m.	Networking Break
10:30 a.m. 12:00 p.m.	Commission Plenary
12:00 p.m. – 1:30 p.m.	Lunch Break
3:00 p.m. - 3:30 p.m.	Networking Breaks

Wednesday:

7:30 a.m. – 8:30 a.m.	Meet and Greet – Networking Opportunity
10:00 a.m. – 10:30 a.m.	Networking Break
12:00 p.m. – 1:30 p.m.	Lunch Break
3:00 p.m. - 3:30 p.m.	Networking Breaks

Thursday:

7:30 a.m. – 8:30 a.m.	Meet and Greet – Networking Opportunity
10:00 a.m. – 10:30 a.m.	Networking Break

LAPTOP SETUP AND TESTING WITH OCIO TECH

- Arrive at the Bethesda North Marriott Hotel and Conference Center on **Monday, March 12, 2018 between 9:00 a.m. and 11:00 a.m.**
    - Test laptop/monitor connection
    - Verify loaded presentation shows accurately on monitor
- There will be a NRC technician from OCIO to complete the install of laptops with interactive (multi page slides). Single slide presenters (ePoster) may view their presentation at that time as well.

FLOORPLAN FOR EPOSTER AND DIGITAL PRESENTATIONS

- The preliminary floorplan is attached for your reference. If for any reason the floorplan should change, you will be notified.
- Ensure accuracy when referring to your poster, refer to the attached ePoster and Digital Presentation by number. Note, the posters were previously renumbered however, some presenters continued to use the old numbers. Please use the following numbered posters and titles.

SHIPPING MATERIALS

- If you plan to include materials for your ePoster and Digital Presentation with the bulk shipment from the NRC to the Marriott, it is imperative that you have all of the items properly labeled and taken to the Reprographics OP1-B3500 common area - labeled RIC shipping by **close of business Thursday, March 8, 2018**.
- All materials must be packed, properly labeled and in the designated Reprographics pick up location by close of business March 8, 2018. Provide on the shipping label and also to RICMST.Resource@nrc.gov:
    - The total number of boxes
    - Include your name
    - Include title of your ePoster and Digital Presentation
- We do ask that you **limit the amount of materials** you will bring due to reduced space in the Marriott foyer area.
- Affix a completed **shipping label to each box**. The materials received will be included on the manifest report for tracking purposes.
- Return shipping will occur on March 15 at 1:00 pm. If you wish to have any materials returned to the NRC prior to your departure from the Marriott, please affix a returnTo ensure accurate return please affix a label with your name and mailstop. All unmarked materials left in the Marriott foyer unmarked will be discarded.

Thank you,

-

Brenett (Bren) U. Warren
Program Specialist
Office of Nuclear Reactor Regulation
NRR/DMPS/RISB
Location: O13D5
301-415-3114
Brenett.Warren@nrc.gov

Follow us on Twitter @nrcgov_ric

POSTER 7: HARVESTING OF AGED MATERIALS FROM NPPS

VISITOR NAME/ORG: _____

BUSINESS CARD: ☐ **YES** ☐ **NO** **EMAIL:**

Please describe your interest in harvesting components that were aged in representative light water reactor (LWR) environments in nuclear power plants (NPPs). Is this related to subsequent license renewal (SLR) and NPP long-term operation (LTO)?

---

1. **Do you expect to have harvestable components that NRC should be aware of? How so? When?**

   ☐ **Within 5 years** ☐ **5-10 years** ☐ **sometime in future** ☐ **not likely**

---

2. **Please comment on the things that stand out in your mind about SLR or harvesting components.**

---

3. **What should NRC be doing differently to get ready for SLR? Would you like NRC to have another public meeting on SLR/harvesting? Other suggestions?**

---

4. **Please rate the topics on a scale from 1 to 5 (5 being highest) in terms of interest:**

- Reactor pressure vessel embrittlement [ ]
- Electrical cable qualification and condition assessment [ ]
- Irradiation-assisted degradation of reactor internals [ ]
- Concrete structures and containment degradation [ ]
- Unique field aspects of degradation [ ]
- Availability of reliable inservice inspection (ISI) techniques [ ]
- Creating a harvesting database [ ]
- More coordination between NRC and industry on harvesting and SLR research [ ]
- Other industry activities [ ]
- Other areas NRC should focus on?

Please provide any other comments or feedback that may be important to NRC's work on harvesting of aged materials from NPPs.

Return to: NRC Staff at Poster 7 across from Salon D — By: March 15, 2018

Name **Date**

From: Hiser, Matthew
Sent: Wed, 1 Mar 2017 20:54:44 +0000
To: Wittick, Brian
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Thanks Brian!

From: Wittick, Brian
Sent: Wednesday, March 01, 2017 3:44 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Sircar, Madhumita <Madhumita.Sircar@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>; Buford, Angela <Angela.Buford@nrc.gov>
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Hi Matt,

Please register Angie Buford for our NRR staff attendee.

Thanks,

Brian Wittick
BC/RASB, DLR, NRR
301-415-2496

From: Hiser, Matthew
Sent: Tuesday, February 28, 2017 10:08 AM
To: Wittick, Brian <Brian.Wittick@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Sircar, Madhumita <Madhumita.Sircar@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Hi Brian,

I am organizing the harvesting workshop hosted by RES next week. We have limited space in the room, but had allotted one spot for an NRR concrete/structural staff member.

Mita Sircar from RES will be attending in the room and after speaking with Mita and Dogan, we wanted to reach out to you to see if one of your staff is available and interested in attending the workshop in person (the webinar is also available to all staff).

Please let me know if you have any questions and which staff member will plan to attend.

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

From: Frankl, Istvan
Sent: Friday, February 24, 2017 2:24 PM
To: Bloom, Steven <Steven.Bloom@nrc.gov>; Wittick, Brian <Brian.Wittick@nrc.gov>; Morey, Dennis <Dennis.Morey@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Rudland, David <David.Rudland@nrc.gov>; Zimmerman, Jacob <Jacob.Zimmerman@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Jung, Ian <Ian.Jung@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>
Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>; Berrios, Ilka <Ilka.Berrios@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: 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
Sent: Wed, 1 Mar 2017 13:16:34 +0000
To: Sircar, Madhumita
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Thanks Mita!

From: Sircar, Madhumita
Sent: Tuesday, February 28, 2017 4:38 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Seber, Dogan <Dogan.Seber@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>; Philip, Jacob <Jacob.Philip@nrc.gov>
Subject: FW: Announcement of Ex-Plant Materials Harvesting Workshop

Matt,
Please find attached, the last slide is on concrete.

Thanks,
Mita Sircar
Tel: 301-415-1804

From: Sircar, Madhumita
Sent: Tuesday, February 28, 2017 4:32 PM
To: Pires, Jose <Jose.Pires@nrc.gov>
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Sure will do.

From: Pires, Jose
Sent: Tuesday, February 28, 2017 4:30 PM
To: Sircar, Madhumita <Madhumita.Sircar@nrc.gov>
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Mita

It looks fine to me. Would it be OK to move the second bullet to last? Thanks, Jose.

- Structures exposed to high radiation
- ~~Large structural sections for testing~~
- Post-tensioned structures
- Corrosion of reinforcing steel, tendon, liner, embedment
- Spent fuel pool and transfer canal-boric acid attack on concrete in PWRs
- Alkali Aggregate Reaction
- Large structural sections for testing

From: Sircar, Madhumita
Sent: Tuesday, February 28, 2017 3:47 PM
To: Pires, Jose <Jose.Pires@nrc.gov>
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Jose,

Please see the last slide (Concrete). Feel free to make any change.

Thanks,
Mita Sircar
Tel: 301-415-1804

From: Pires, Jose
Sent: Monday, February 27, 2017 10:30 AM
To: Sircar, Madhumita <Madhumita.Sircar@nrc.gov>; Philip, Jacob <Jacob.Philip@nrc.gov>
Subject: FW: Announcement of Ex-Plant Materials Harvesting Workshop

FYI

From: Frankl, Istvan
Sent: Friday, February 24, 2017 2:24 PM
To: Bloom, Steven <Steven.Bloom@nrc.gov>; Wittick, Brian <Brian.Wittick@nrc.gov>; Morey, Dennis <Dennis.Morey@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Rudland, David <David.Rudland@nrc.gov>; Zimmerman, Jacob <Jacob.Zimmerman@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Jung, Ian <Ian.Jung@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>
Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>; Berrios, Ilka <Ilka.Berrios@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: Announcement of Ex-Plant Materials Harvesting Workshop

Dear Colleagues:

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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: Oberson, Greg
Sent: Fri, 3 Mar 2017 11:20:28 -0500
To: Hiser, Matthew
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Thanks, I have the link you sent out below.

From: Hiser, Matthew
Sent: Friday, March 03, 2017 11:18 AM
To: Oberson, Greg <Greg.Oberson@nrc.gov>
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Hi Greg,

Yeah absolutely. We're not making it public in terms of meeting announcement and everything, but we haven't been turning away any participants via webinar.

You have the webinar link to share with him I guess?

Matt

From: Oberson, Greg
Sent: Friday, March 03, 2017 11:17 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: Announcement of Ex-Plant Materials Harvesting Workshop

Matt,
Yiming asked me if he could observe the webinar. Is that allowed?

Greg

From: Hiser, Matthew
Sent: Monday, February 27, 2017 3:58 PM
To: Audrain, Margaret <Margaret.Audrain@nrc.gov>; Focht, Eric <Eric.Focht@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Rao, Appajosula <Appajosula.Rao@nrc.gov>; Rossi, Matthew <Matthew.Rossi@nrc.gov>
Subject: FW: Announcement of Ex-Plant Materials Harvesting Workshop

Fellow CMBers,

FYI – information on harvesting workshop.

Please let me know if you have any questions or 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

From: Frankl, Istvan
Sent: Friday, February 24, 2017 2:24 PM
To: Bloom, Steven <Steven.Bloom@nrc.gov>; Wittick, Brian <Brian.Wittick@nrc.gov>; Morey, Dennis <Dennis.Morey@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Rudland, David <David.Rudland@nrc.gov>; Zimmerman, Jacob <Jacob.Zimmerman@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Jung, Ian <Ian.Jung@nrc.gov>; Seber, Dogan <Dogan.Seber@nrc.gov>
Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Pires, Jose <Jose.Pires@nrc.gov>; Berrios, Ilka <Ilka.Berrios@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: Announcement of Ex-Plant Materials Harvesting Workshop

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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: Audrain, Margaret
Sent: Fri, 17 Aug 2018 17:33:24 +0000
To: Hiser, Matthew
Subject: RE: are we having the harvesting meeting this afternoon? eom

No problem!

From: Hiser, Matthew
Sent: Friday, August 17, 2018 1:31 PM
To: Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: are we having the harvesting meeting this afternoon? eom

Yep, and thanks for your email reminding me to get the bridge line!

From: Audrain, Margaret
Sent: Friday, August 17, 2018 12:59 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: are we having the harvesting meeting this afternoon? eom

From: Hiser, Matthew
Sent: Fri, 13 Apr 2018 17:29:24 +0000
To: Poehler, Jeffrey
Subject: RE: article

Thanks for sharing Jeff… Pat, Amy, and I heard about this yesterday from Neil Sheehan in Region I….

From: Poehler, Jeffrey
Sent: Friday, April 13, 2018 1:12 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: FW: article

From: Ruffin, Steve
Sent: Friday, April 13, 2018 1:04 PM
To: NRR_DMLR_MVIB Distribution <NRR_DMLR_MVIB_Distribution@nrc.gov>
Subject: FW: article

Regards,

Steve Ruffin, Branch Chief
Vessels & Internals Integrity Branch (MVIB)
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation
Email: Steve.Ruffin@nrc.gov
Phone: (301) 415-1985

From: Wilson, George
Sent: Friday, April 13, 2018 9:50 AM
To: Bloom, Steven <Steven.Bloom@nrc.gov>; Ruffin, Steve <Steve.Ruffin@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Rudland, David <David.Rudland@nrc.gov>
Cc: Donoghue, Joseph <Joseph.Donoghue@nrc.gov>
Subject: article

Nuclear Critics Call On NRC To Conduct "Autopsy" On Oyster Creek Components.

The Asbury Park (NJ) Press (4/12, Oglesby, 344K) reports that Paul Gunter of Beyond Nuclear and other critics of atomic energy are urging NRC nuclear regulators to conduct an "autopsy" on Oyster Creek Generating Station in Lacey after it closes permanently later this year. Gunter says that examining the wear and tear in the facility could lead to discoveries that may affect decision-making for the country's remaining fleet of aging nuclear reactors. Gunter said, "The radiation, the heat, the pressure, the vibration, they [are] all having aging impacts on safety boundaries and safety components in the reactor." During a public meeting about Oyster Creek's impending closure and

decommissioning NRC "officials told the gathering that the decommissioning process will take decades to complete." NRC spokeswoman Diane Screnci, "said the commission would consider Gunter's request, but noted that such sampling from plants is a voluntary action by nuclear power companies."

The Lacey (NJ) Patch (4/12, Miller, 1.13M) reports, the NRC has "no plans to pursue the 'harvesting' of any materials or components of the Oyster Creek Nuclear Plant once it closes," according to NRC spokesperson Neil Sheehan, who said, "We are trying to collect information on what might available and of interest to the NRC." The nuclear watchdog groups "want the NRC to oversee a 'strategic harvesting' of aged reactor items from irradiated steel and safety-related components and structures to use as samples for laboratory analysis or what they call an 'autopsy.'" But Sheehan "said costs and budgetary constraints must be considered. In previous harvesting operations of other nuclear plants, the federal Department of Energy and other organizations provided the bulk of the funding, he said."

George Wilson
Director, Division of Materials and License Renewal
Office of Nuclear Reactor Regulation
USNRC
301-415-1711
Office O11E2

From: Hiser, Matthew
Sent: Mon, 16 Apr 2018 11:13:09 +0000
To: Hiser, Allen
Subject: RE: article

Thanks for sharing – The Region I public affairs person reached out to Amy and I last Thursday.

I think a lot of the comments he gave in the second article noted below regarding NRC's role in past harvesting programs came from a phone call I had with him on Thursday, where I updated him on what we are doing with harvesting and why we haven't pursued any harvesting at Oyster Creek.

From: Hiser, Allen
Sent: Sunday, April 15, 2018 5:23 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: Fw: article

From: Wilson, George
Sent: Friday, April 13, 2018 9:49:42 AM
To: Bloom, Steven; Ruffin, Steve; Alley, David; Hiser, Allen; Rudland, David
Cc: Donoghue, Joseph
Subject: article

Nuclear Critics Call On NRC To Conduct "Autopsy" On Oyster Creek Components.

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George Wilson
Director, Division of Materials and License Renewal
Office of Nuclear Reactor Regulation
USNRC
301-415-1711
Office O11E2

From: Moyer, Carol
Sent: Mon, 20 Mar 2017 16:10:38 +0000
To: Hiser, Allen
Subject: RE: ASME Code Update

Allen,

What is the context for this? Is this for Bill Holston's NRC Report for the May meetings?

Carol

From: Hiser, Allen
Sent: Monday, March 20, 2017 12:09 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>
Subject: ASME Code Update

Carol and Amy,

Below is the RES information for the ASME Code update from the last meeting. Can you make any needed changes/updates and return this to me by the end of the week?

> The NRC's Office of Nuclear Regulatory Research (RES) is sponsoring a March 7-8, 2017, workshop on Ex-Plant Materials Harvesting, to be held at NRC headquarters. There are increasing opportunities to harvest the safety-critical components from decommissioning plants, both domestic and international. The harvested materials are valuable because they have been exposed to actual in-service plant operating conditions (temperature, irradiation, coolant, etc.), unlike virgin materials which are tested under laboratory conditions. Data from ex-plant materials could help address technical gaps identified for extended operation of nuclear power plants due to highly relevant aging conditions.
>
> NRC staff, including RES staff, will participate in the Fourth Plant Life Management Conference (PLiM) on 23-27 October 2017 in Lyon, France, which is being organized by the International Atomic Energy Agency.
>
> RES is sponsoring a poster on SLR research at the March 14-16 RIC meeting at NRC headquarters.

Thanks,
Allen

Note to requester: There was no hyperlink under the underlined text in the original email record provided by RES staff.

From: Hiser, Matthew
Sent: Fri, 10 Feb 2017 18:49:05 +0000
To: Tregoning, Robert
Subject: RE: AW: AW: Interest in Harvesting Workshop

OK, I will go ahead and send emails today. I previously contacted EnBW, but haven't heard anything.

From: Tregoning, Robert
Sent: Friday, February 10, 2017 1:41 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: AW: AW: Interest in Harvesting Workshop

No, I haven't contacted either of these guys or anyone at EnBW either.....

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: Friday, February 10, 2017 12:26 PM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: RE: AW: AW: Interest in Harvesting Workshop

Hi Rob,

For this contact at EWN and the prior one at VGB, have you contacted them? If not, I will. Just want to make sure I'm not doubling up on something you've already done.

Thanks!
Matt

From: Tregoning, Robert
Sent: Friday, February 10, 2017 7:27 AM
To: Jendrich, Uwe Dr. <Uwe.Jendrich@grs.de>
Cc: Sievers, Jürgen Dr. <Juergen.Sievers@grs.de>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: AW: AW: Interest in Harvesting Workshop

Uwe:

Thanks for your offer for a presentation as well as providing the title. We will be back in touch with a final workshop agenda shortly. Also, thank you so much for the EWN contact. I'm very much looking forward to meeting you during the workshop. Have a good weekend.

Warm regards,

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: Jendrich, Uwe Dr. [mailto:Uwe.Jendrich@grs.de]
Sent: Friday, February 10, 2017 7:14 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Sievers, Jürgen Dr. <Juergen.Sievers@grs.de>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: [External_Sender] AW: AW: Interest in Harvesting Workshop

Rob,

Thank you for the information about the workshop.

I am willing to give a short presentation in session 3: Role of GRS, plants in decommissioning in Germany.

Another contact address of a state-owned company dedicated to dismantling (Greifswald (WWER 440), German research reactors, presumably involved in KWO(PWR at Obrigheim)):
EWN Entsorgungswerk für Nuklearanlagen GmbH
Postfach 1125
17507 Lubmin
Technical Director: Henry Cordes
Telefon 038354 4-5000
henry.cordes@ewn-gmbh.de

Kind regards

Uwe

Von: Tregoning, Robert [mailto:Robert.Tregoning@nrc.gov]
Gesendet: Mittwoch, 8. Februar 2017 19:12
An: Jendrich, Uwe Dr.

Cc: Sievers, Jürgen Dr.; Hiser, Matthew; Purtscher, Patrick
Betreff: RE: AW: Interest in Harvesting Workshop

Uwe:

Thanks for your reply. I'm glad you'll be attending the workshop. I've attached a presentation file that has logistical information, the overall workshop objectives, and objectives for individual sessions. Would you be willing to make a presentation in 1 or more of these sessions? In general the presentations should be short (e.g., a few slides at most for sessions 1 and 5; and at most 20 – 30 minutes for one of the other sessions) and the plan is to have everything be informal so that the preparation time is not too great and we leave plenty of time for discussion. Please let me know if you would be amenable to this and if you have any questions about the workshop.

Also, thank you for the contact information at VGB Powertech. We will certainly contact Dr. Mohrbach. Let me know if you have any luck finding any other contacts. We've currently trying to reach someone at EBnW.

Warm regards,

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: Jendrich, Uwe Dr. [mailto:Uwe.Jendrich@grs.de]
Sent: Wednesday, February 08, 2017 12:02 PM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Sievers, Jürgen Dr. <Juergen.Sievers@grs.de>
Subject: [External_Sender] AW: Interest in Harvesting Workshop

Dear Rob,

Please apologize my late reply due to two weeks of [redacted] (b)(6)
As answers to your questions:

1. I am planning to participate in the workshop. I just need the traveling permits etc.
2. I try to contact a couple of people to find out persons responsible for decommissioning. These will certainly be different for the plants from different operators. You may also try Mr. Mohrbach at the headqarter of the Association of all power plant operators (VGB Powertech, Dr. Ludger Mohrbach, Tel: +49 201 8128 221, E-Mail: ludger.mohrbach@vgb.org.)

Kind regards

Uwe

Dr. Uwe Jendrich
Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH
Abteilung Anlagenkonzepte / Plant Concepts Department
Bereich Reaktorsicherheitsanalysen / Reactor Safety Analyses Division
Schwertnergasse 1
50667 Köln
Germany

Phone: +49 221 2068-879
Fax: +49 221 2068-10879
E-Mail: uwe.jendrich@grs.de

www.grs.de
twitter.com/GRS_de
facebook.com/GRS.DE

Vorsitzende des Aufsichtsrates: Parl. Staatssekretärin Rita Schwarzelühr-Sutter
Geschäftsführer: Uwe Stoll, Hans J. Steinhauer
Registergericht: Amtsgericht Köln, HRB 7665
Sitz der Gesellschaft: Köln
Disclaimer: www.grs.de/content/email-disclaimer

Von: Tregoning, Robert [mailto:Robert.Tregoning@nrc.gov]
Gesendet: Montag, 30. Januar 2017 13:31
An: Jendrich, Uwe Dr.
Cc: Sievers, Jürgen Dr.
Betreff: RE: Interest in Harvesting Workshop

Dr. Jendrich:

I just want to follow up on the information that I sent you on the Harvesting Workshop that will be held on March 7 – 8, 2017 at the U.S. NRC Headquarters in Rockville, MD USA. I have two questions that I'm hoping you can help me with.

1. Will you or a colleague from GRS attend and hopefully participate in the workshop?
2. We would like to invite a participant from a German decommissioning company. We currently have participants representing U.S. decommissioning companies but the German situation is both unique and different compared to the U.S. Is there someone in one of these companies that you can put me in touch with? I'm aware of a few companies but I would prefer not to just randomly contact them.

Thank you so much for your consideration and support of the workshop.

All the best,

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: Tregoning, Robert
Sent: Tuesday, January 17, 2017 4:56 PM
To: Jendrich, Uwe Dr. <Uwe.Jendrich@grs.de>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: Interest in Harvesting Workshop

Dear Dr. Jendrich:

Thank you so much for your email and your interest in getting more information about the harvesting workshop. I've attached a workshop announcement as well as a condensed workshop agenda for your information. You can see that we are planning five unique sessions as part of the workshop. Each session has a specific theme, or objective, as outlined below (and in the attached agenda).

1. Session 1 will consist of short presentations and a panel discussion on the motivation for harvesting.
2. Session 2 will discuss data needs best met through harvesting.
3. Session 3 will discuss sources of materials for harvesting programs
4. Session 4 will discuss lessons-learned from past harvesting programs and practical aspects associated with harvesting.
5. Session 5 will attempt to summarize the workshop and planning a harvesting program, as well as discuss actions and next steps

Please let me know if you have any questions or would like any additional information after reviewing the attachments. Thank you again for your interest.

Regards,

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: Jendrich, Uwe Dr. [mailto:Uwe.Jendrich@grs.de]
Sent: Monday, January 16, 2017 3:38 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: [External_Sender] Interest in Harvesting Workshop

Dear Mr. Tregoning,

I am interested in the topic of the Harvesting Workshop.
Can you please provide me with more detailed information.
Thank you.

With kind regards

Uwe Jendrich

Dr. Uwe Jendrich
Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH
Abteilung Anlagenkonzepte / Plant Concepts Department
Bereich Reaktorsicherheitsanalysen / Reactor Safety Analyses Division
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Vorsitzende des Aufsichtsrates: Parl. Staatssekretärin Rita Schwarzelühr-Sutter
Geschäftsführer: Uwe Stoll, Hans J. Steinhauer
Registergericht: Amtsgericht Köln, HRB 7665
Sitz der Gesellschaft: Köln
Disclaimer: www.grs.de/content/email-disclaimer

From: Hiser, Matthew
Sent: Tue, 21 Feb 2017 12:30:17 +0000
To: Tregoning, Robert;Purtscher, Patrick
Subject: RE: AW: AW: Materials Harvesting Workshop at USNRC

That's a good idea! With the GoToMeeting, it should be possible… Let's discuss this morning and if we like the idea I'll suggest it and see what they say.

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

From: Tregoning, Robert
Sent: Tuesday, February 21, 2017 7:25 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: AW: AW: Materials Harvesting Workshop at USNRC

Does it make sense to see if they can give a presentation remotely? Let's discuss….

Robert Tregoning
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11545 Rockville Pike
Rockville, MD 20852-2738
ph: 301-415-2324
fax: 301-415-6671

From: Hiser, Matthew
Sent: Tuesday, February 21, 2017 7:24 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: FW: AW: AW: Materials Harvesting Workshop at USNRC

No German decommissioning company. Probably should've started the cold-calling a little earlier…

From: Storz Timo [mailto:t.storz@enbw.com]
Sent: Tuesday, February 21, 2017 3:37 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: [External_Sender] AW: AW: Materials Harvesting Workshop at USNRC

Dear Matthew,

I am sorry for not answering earlier. We really want to join your workshop and tried to make it possible that a representative of us join your workshop.
But since the workshop is in 2 weeks, all relevant persons that could share profound experience are temporarily not available.
This is due to the fact that we just started to build two facilities that help us harvesting materials from our D&D projects.
And our experts are fixed in the projects.

Nevertheless, we hope that you will approach us in future to join your workshops and share our experience.
We would appreciate that.

Best regards,
Timo

Von: Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]
Gesendet: Freitag, 17. Februar 2017 13:47
An: Storz Timo
Betreff: RE: AW: Materials Harvesting Workshop at USNRC

Dear Timo:

I just wanted to check if you all have determined whether you will be able to participate in the workshop.

Thanks!
Matt

From: Storz Timo [mailto:t.storz@enbw.com]
Sent: Wednesday, February 15, 2017 4:05 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: [External_Sender] AW: Materials Harvesting Workshop at USNRC

Dear Matthew,

thank you for forwarding the e-mail.
I already checked if I can participate but unfortunately I am (b)(6) that time.
I talked to my boss and we will check if we can send somebody to the workshop.

We will reply by the end of the week.

Best regards,
Timo

Timo Storz
Project Manager
Nuclear Decommissioning Services
EnBW Kernkraft GmbH
Kernkraftwerk Neckarwestheim
Im Steinbruch
74382 Neckarwestheim
Phone: +49 7133 13-23255
Cell: [redacted] (b)(6)
mailto:t.storz@enbw.com
www.enbw.com/decommissioning_service
EnBW Kernkraft GmbH; Sitz der Gesellschaft: Obrigheim; Registergericht Mannheim; HRB Nr. 441806
Vorsitzender des Aufsichtsrats: Dr. Bernhard Beck
Geschäftsführer: Jörg Michels (Vorsitzender), Dr. Wolfgang Eckert, Christoph Heil, Volker Reinhard

---

Von: Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]
Gesendet: Dienstag, 14. Februar 2017 17:02
An: Storz Timo
Betreff: FW: Materials Harvesting Workshop at USNRC

Dear Timo:

Thank you for the phone conversation today. I am forwarding the email that was previously sent to EnBW customer service.

We hope that EnBW may be able to participate in the workshop.

Sincerely,
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

From: Hiser, Matthew
Sent: Thursday, February 02, 2017 10:40 AM
To: 'rueckbauservice@kk.enbw.com' <rueckbauservice@kk.enbw.com>
Subject: Materials Harvesting Workshop at USNRC

Dear EnBW:

The US Nuclear Regulatory Commission is hosting a workshop on March 7-8, 2017 on the topic of harvesting materials from decommissioning nuclear plants. Participants will primarily be from nuclear materials research organizations from around the world, including Europe and Asia. One of the workshop sessions is focused on the practical aspects of a harvesting program and the decommissioning process.

A colleague of mine attended a conference in late 2014 with a presentation (attached) from EnBW about their decommissioning plans and process. We would like to invite a representative from EnBW to participate and present on the decommissioning process in Germany and how harvesting may interface with the decommissioning process.

I have also attached an announcement and high-level agenda for the workshop. Please feel free to contact me for additional information.

Sincerely,

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

From: Kirk, Mark
Sent: Thu, 13 Sep 2018 10:31:52 +0000
To: Iyengar, Raj;Tregoning, Robert
Cc: Hiser, Matthew;Purtscher, Patrick;Audrain, Margaret;Kirk, Mark
Subject: RE: AW: AW: Materials Harvesting Workshop at USNRC

Rob –

Also my thanks for the info. I was not aware of it … very interesting.

Please give my regards to Klaus when you see / speak to him.

Best

mark

From: Iyengar, Raj
Sent: Wednesday, September 12, 2018 12:53 PM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Kirk, Mark <Mark.Kirk@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: AW: AW: Materials Harvesting Workshop at USNRC

Thanks so much, Rob.

From: Tregoning, Robert
Sent: Wednesday, September 12, 2018 12:52 PM
To: Iyengar, Raj <Raj.Iyengar@nrc.gov>; Kirk, Mark <Mark.Kirk@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: FW: AW: AW: Materials Harvesting Workshop at USNRC

Raj/Mark:

We've been following up concerning Muhleberg w.r.t. the harvesting effort (see thread below). We'll obviously keep you guys, and everyone else, in the loop as we get more information.

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: Tregoning, Robert
Sent: Monday, September 10, 2018 7:32 AM
To: 'Germerdonk Klaus' <Klaus.Germerdonk@ensi.ch>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: AW: AW: Materials Harvesting Workshop at USNRC

Klaus:

Welcome back. I hope that you have had a good summer. I'm very interested to hear about the latest for Muhleberg. Please just let me know when you would like to discuss further. I'm pretty busy for the rest of September with meetings and travel but would love to schedule a call at our earliest mutual convenience.

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: Germerdonk Klaus [mailto:Klaus.Germerdonk@ensi.ch]
Sent: Monday, September 10, 2018 7:13 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: [External_Sender] AW: AW: Materials Harvesting Workshop at USNRC

Rob

After a long break I am finally back in the office.

Of cause, I am interested in further discussion with you regarding Muhleberg harvesting.

So, I have to catch up with the latest status of planned activities.

With best regards

Klaus

Von: Tregoning, Robert [mailto:Robert.Tregoning@nrc.gov]
Gesendet: Montag, 7. Mai 2018 17:03
An: Germerdonk Klaus <Klaus.Germerdonk@ensi.ch>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Betreff: FW: AW: Materials Harvesting Workshop at USNRC [signed INVALID]

Klaus:

I'm resending an email that I sent you back in August, 2017 expressing interest in the Muhleberg harvesting and evaluation project. I'm resending this information in light of your upcoming position change within ENSI. I would be happy to discuss the Muhleberg harvesting project further with you in order to explore possibilities for NRC to be involved in this project. Let me know if you are interested in further discussions.

Warm regards,

Rob

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

From: Tregoning, Robert
Sent: Tuesday, August 29, 2017 11:05 AM
To: Germerdonk Klaus (Klaus.Germerdonk@ensi.ch) <Klaus.Germerdonk@ensi.ch>
Subject: FW: AW: Materials Harvesting Workshop at USNRC

Klaus:

How are you? I hope that all is well with you and your family and that you are not too consumed with Beznau ☺. I'm forwarding the email that my colleague, Matt Hiser, sent to Dr. Maillander about your harvesting plans for Muhleberg for your awareness. Perhaps you would like to participate in any discussions.

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
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From: Hiser, Matthew
Sent: Tuesday, August 29, 2017 10:35 AM
To: Mailänder Reiner <Reiner.Mailaender@ensi.ch>
Cc: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: RE: AW: Materials Harvesting Workshop at USNRC

Dear Dr. Mailänder,

I wanted to follow up with you and others at ENSI on the plans for harvesting from the Muhleberg plant, which were shared in early form and discussed with the NRC back in early 2016. We have been making efforts here at the NRC to identify and prioritize harvesting opportunities to help address technical issues related to long-term operation. The workshop we hosted earlier this year was a key step in that effort.

Given the time that has passed since your visit in 2016, we were interested in how the planning for this effort at Muhleberg has progressed. NRC is interested in pursuing harvesting opportunities for research that present a good value for addressing important issues. Would it be possible to arrange a call with the appropriate staff at ENSI to discuss these plans at Muhleberg?

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

From: Mailänder Reiner [mailto:Reiner.Mailaender@ensi.ch]
Sent: Wednesday, January 25, 2017 3:53 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: [External_Sender] AW: Materials Harvesting Workshop at USNRC

Dear Mr. Hiser

Thank you for informing us about the planned workshop. I will not be able to attend the workshop nor the RIC this year, but I have passed on your message to our experts in the relevant fields.

Kind regards

Reiner Mailänder

Ph.D., GeoEcologist
ENSI Research Coordinator, Deputy Section Head

Swiss Federal Nuclear Safety Inspectorate ENSI
International Affairs Section
Industriestrasse 19
CH-5200 Brugg

Phone +41 56 460 86 19
E-Mail reiner.mailaender@ensi.ch
Website www.ensi.ch/en

Von: Hiser, Matthew [mailto:Matthew.Hiser@nrc.gov]
Gesendet: Dienstag, 24. Januar 2017 17:46
An: Mailänder Reiner
Betreff: Materials Harvesting Workshop at USNRC

Dear Mr. Mailander:

I am a materials engineer in the NRC's Office of Research and was present for your visit to the NRC last year to discuss plans in Switzerland for harvesting from the Muhleberg plant that will be shutting down in 2019.

I am coordinating a 2-day workshop on ex-plant materials harvesting. This workshop will be held on March 7-8 (one week before NRC's Regulatory Information Conference) here at NRC headquarters. I wanted to make you aware of the workshop and have attached the workshop announcement and session topics for your information.

We are currently working to finalize the agenda. If you have any questions or would like further information, please feel free to contact me.

Sincerely,

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

From: Iyengar, Raj
Sent: Tue, 18 Oct 2016 12:40:19 -0400
To: Tregoning, Robert
Cc: Hiser, Matthew
Subject: RE: Bi-weekly coordiantion call

Thanks, Rob and Matt.

This is quite helpful.

From: Tregoning, Robert
Sent: Tuesday, October 18, 2016 12:24 PM
To: Iyengar, Raj <Raj.Iyengar@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: Bi-weekly coordiantion call

Raj:

Please cover the latest SLR guidance document status and plans: we're basically in the internal review and concurrence portion of the process.
Also, please provide information on the latest plans for the material harvesting workshop during the RIC. Matt can provide you with the latest information on this.
I guess I would cover PLIM as well to see what keynote speakers from NRC are going to be requested.
You also might want to mention that you'll be briefing Mike W. on SLR activities
I also presume you'll recap your AREVA trip and highlight any more of these (are there any?)

I'm sure you'll have many other things to cover ☺

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: Iyengar, Raj
Sent: Tuesday, October 18, 2016 12:18 PM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: RE: Bi-weekly coordiantion call

Rob,

Thanks. Do you want me to mention anything during the call?

Raj

From: Tregoning, Robert
Sent: Tuesday, October 18, 2016 12:14 PM
To: Bernhoft, Sherry <sbernhoft@epri.com>; Rich Reister (Richard.Reister@nuclear.energy.gov) <Richard.Reister@nuclear.energy.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>
Cc: Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: Bi-weekly coordiantion call

Sherry/Rich:

I've got a conflict with another meeting this afternoon and, unfortunately, will not be on this week's call.

Regards,

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

-----Original Appointment-----
From: Bernhoft, Sherry [mailto:sbernhoft@epri.com]
Sent: Thursday, September 29, 2016 3:52 PM
To: Bernhoft, Sherry; Rich Reister (Richard.Reister@nuclear.energy.gov); Tregoning, Robert;

Iyengar, Raj
Cc: Hull, Amy
Subject: [External_Sender] Bi-weekly coordiantion call
When: Tuesday, October 18, 2016 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: 1-855-797-9485 PIN [redacted] (b)(6)

Please note new conference call #

Thanks

Sherry

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From: Burton, William
Sent: Tue, 27 Oct 2015 07:16:40 -0400
To: Hull, Amy;Tregoning, Robert;Hiser, Matthew;Rao, Appajosula
Subject: RE: Brian Thomas has Request

I think we were able to accomplish what we set out to accomplish. If you go to the meeting schedular, you can get the DOE/EPRI slides.

From: Hull, Amy
Sent: Monday, October 26, 2015 8:55 PM
To: Burton, William <William.Burton@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Rao, Appajosula <Appajosula.Rao@nrc.gov>
Subject: RE: Brian Thomas has Request

How did it go today? I was in middle of discussions with people here at PNNL on ex-plant harvesting so I could not participate.

From: Burton, William
Sent: Monday, October 26, 2015 11:26 AM
To: Kirk, Mark; Hull, Amy; Rao, Appajosula; Tregoning, Robert; Murdock, Darrell; Sircar, Madhumita; Burke, John; Pires, Jose
Cc: Fairbanks, Carolyn; Doutt, Clifford; Medoff, James; Buford, Angela; Iyengar, Raj; Thomas, Brian; Brady, Bennett; Bloom, Steven
Subject: Brian Thomas has Request

Hi Folks,

I just spoke with Brian Thomas. He would like you to be prepared to discuss the "why" behind the research. In other words, why did we begin this work? What was the intended use for the results of the research? If we have findings (interim results) now, what is it and what do we think about it?

I don't expect you to revise the slides for the 1 pm meeting to incorporate this information, but if feel comfortable discussing it at this afternoon's joint dry run, please do. Otherwise, we can deal with it at the 2nd internal dry run on 11/4.

Thanx,

Butch

William Burton
Senior Project Manager
Subsequent Renewal, Guidance, and Operations Branch (RSRG)
Division of License Renewal (DLR)
Office of Nuclear Reactor Regulation (NRR)
U.S. Nuclear Regulatory Commission (NRC)
301-415-6332

From: Moyer, Carol
Sent: Wed, 19 Sep 2018 16:23:51 +0000
To: Yee, On
Cc: Purtscher, Patrick;Tregoning, Robert
Subject: RE: Clarification - NRR-2017-006 - Task 2 - PNNL harvesting report

Hello, On,

Pat Purtscher has the lead for this portion of the project. He told me this morning that he expects to have the final draft of the PNNL technical letter report by the 1st week of October. NRR can have the report then, but for formal documentation of the deliverable, I suppose we should do a transmittal memo for the TLR, and get our Division Director's concurrence. That will probably add about 2 weeks.

-Carol

From: Yee, On
Sent: Wednesday, September 19, 2018 9:34 AM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: Clarification - NRR-2017-006 - Task 2 - PNNL harvesting report

Carol,

One clarification from our meeting earlier this month – Rob mentioned that the PNNL report would be finalized in early October.

- Did this mean RES was finalizing the PNNL report to send to NRR for review?
- Or did this mean PNNL will be finalizing the report to send to RES? If this is the case – when would NRR be receiving the report?

Thank you

Note to requester: The version of this email provided by RES staff to the FOIA office ended with the 5/16/2017 email header with no further content.

From: Hiser, Matthew
Sent: Wed, 20 Feb 2019 12:38:39 +0000
To: Hiser, Matthew
Subject: RE: commenfinishing now, 3rd version lost on citrix..

From: Hiser, Matthew
Sent: Friday, May 19, 2017 10:41 AM
To: Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: commenfinishing now, 3rd version lost on citrix....: I will take along printout to [redacted] (b)(6) and get any comments back to you by 8am tomorrow morning.....[eom]: pls will you send me the draft summary report?: 3 sections revised -- CMB update 20170517.

Thanks Amy for reviewing! I think the workshop agenda is already in Appendix II...

If your comments are on hard copy, feel free to drop by my desk and I can see them on Monday. (No need to make them electronic if you don't have to ☺)

Thanks!
Matt

From: Hull, Amy
Sent: Friday, May 19, 2017 10:37 AM
To: Hiser, Matthew
Subject: commenfinishing now, 3rd version lost on citrix....: I will take along printout to [redacted] (b)(6) and get any comments back to you by 8am tomorrow morning.....[eom]: pls will you send me the draft summary report?: 3 sections revised -- CMB update 20170517.docx

...a main thing, I think it would be useful to attach the agenda to the summary report as an appendix, and to have a table of contents at the front (since it is already 26 pages). This will be archived in ADAMS and you want to have the information easily retrievable in the future.

I will send you the detailed corrections but as it stands it does not include title of presentations and attaching the agenda would avoid having to write this in.

From: Hull, Amy
Sent: Thursday, May 18, 2017 8:31 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: I will take along printout to [redacted] (b)(6) and get any comments back to you by 8am tomorrow morning.....[eom]: pls will you send me the draft summary report?: 3 sections revised -- CMB update 20170517.docx

From: Hiser, Matthew
Sent: Tuesday, May 16, 2017 10:42 AM
To: Hull, Amy <Amy.Hull@nrc.gov>
Subject: RE: pls will you send me the draft summary report?: 3 sections revised -- CMB update 20170517.docx

Hi Amy,

Sure thing – here you go ☺ Please take a look and provide any comments or edits.

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

From: Hull, Amy
Sent: Tuesday, May 16, 2017 10:34 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: pls will you send me the draft summary report?: 3 sections revised -- CMB update 20170517.docx

Strategic Approach for Obtaining Material and Component Aging Information (Amy Hull, Pat Purtscher, Matt Hiser) (LTRP)

- Strategic harvesting is one of the new tasks in the new SLR UNR that will replace NRR-2010-006. Staff are working on specific task for Strategic Harvesting in NRR-2017-006.
- Final deliverable expected by early 2017. Final report publication will wait until after harvesting workshop in March.
- Proceedings from the Ex-Plant Materials Harvesting Workshop, held on March 7-8, are compiled in a CMB SharePoint site http://fusion.nrc.gov/res/team/de/cmb/LTO/default.aspx?RootFolder=%2Fres%2Fteam%2Fde%2Fcmb%2FLTO%2FProgram%20Documents%2FStrategic%20Approach%20for%20Obtaining%20Material%20and%20Component%20Aging%20Information&FolderCTID=0x012000A4119D2C08121A4CAE71D67AEB499BF9&View={A08F45B4-F7E9-4960-9890-37F16055A16F} . Good frank discussion with external parties from DOE, EPRI, and international stakeholders on benefits and challenges of harvesting.
- CMB staff preparing workshop summary report (expected by end of May) and follow-up on action items with interested workshop attendees focused on a database for sources of materials and prioritizing data needs for harvesting.
- Pradeep Ramuhalli, PNNL contractor, visited RES/DE/CMB staff concerning this project on 4/18/2017. This was a side-trip for another NDE/OLM project funded by DOE related to advanced reactors.

- One-pager submitted for DE management review.

From: Hull, Amy
Sent: Tuesday, May 16, 2017 10:28 AM
To: Frankl, Istvan (Istvan.Frankl@nrc.gov) <Istvan.Frankl@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: 3 sections revised -- CMB update 20170517.docx

Note to requester: Attachment is immediately following.

From: Hiser, Matthew
Sent: Wed, 24 Jan 2018 21:43:07 +0000
To: Moyer, Carol;Hull, Amy
Subject: RE: completed but under Division Review: Gentle Reminder for Presentation Submissions to OGC/QTE
Attachments: FINAL - ePoster and Digital Presentation Development Flowchart as of 010....xlsx

Hi Carol,

I think it's just to have Division-level approval; OGC review is only for some posters, but all need QTE.... I think.

Slide Presentations
No OGC Review

topics and provide TRC

?017

Due date for obtaining division-level management approval of ePoster and Digital Presentation slides ***complete by 01/24/2018***

↓

Once division-level approval obtained, Presenters send ePoster and digital presentations to to QTE.Resource@nrc.gov for level 1 review; and cc RICMST.Resource @nrc.gov ***complete by 01/26/2018***

↓

QTE reviews ePoster and Digital Presentation slides and provides editorial comments to Presenter for consideration; and cc' RICMST. Resource@nrc.gov ***complete by 01/31/2018***

↓

Presenters receive QTE comments on ePoster and Digital Presentation slides; incorporates as appropriate; and sends to Graphics.Resource @nrc.gov for optical review; cc' RICMST.Resource@nrc.gov ***complete by 02/05/2018***

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

From: Moyer, Carol
Sent: Wednesday, January 24, 2018 4:40 PM
To: Hull, Amy <Amy.Hull@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: completed but under Division Review: Gentle Reminder for Presentation Submissions to OGC/QTE

Hi Amy & Matt,

I found Bren's reminder email to be a bit unclear. Are the posters supposed to have both Division approval and QTE review by the (hopefully extended) deadline? Or, was today's deadline for Div. approval, and then, if necessary, posters are to go for OGC and QTE review?

Thanks,
Carol

From: Frankl, Istvan
Sent: Wednesday, January 24, 2018 4:17 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: FW: completed but under Division Review: Gentle Reminder for Presentation Submissions to OGC/QTE
Importance: High

This is the extension request for the CMB RIC posters.

Thanks,

Steve

From: Hull, Amy
Sent: Wednesday, January 24, 2018 3:30 PM
To: Warren, Brenett <Brenett.Warren@nrc.gov>
Cc: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: completed but under Division Review: Gentle Reminder for Presentation Submissions to OGC/QTE
Importance: High

Hi Brennett,

Our posters are completed but we do not yet have Division level approval. Please give us a couple more days for the following two posters.

Also please note that the abstract for Poster 6, **Evaluation of Additive Manufacturing of Metallic Parts via Direct Metal Laser Melting,** as available on the RIC site, is still wrong. (https://ric.nrc.gov/poster) Please see attached for how it should be written

1. **Harvesting of Aged Materials from Operating and Decommissioning Nuclear Power Plants** In the U.S. nuclear industry today, there are some nuclear power plants (NPPs) that are prematurely ceasing operation, while other plant operators are making plans to extend operating lifespans through subsequent license renewal from 60 to 80 years. Extending plant operation raises technical issues that may require further research on aging mechanisms to reduce

uncertainties associated with material performance. Decommissioning plants provide opportunities for harvesting components that have been aged in representative light water reactor environments.
The NRC has recently undertaken an effort, with the assistance of Pacific Northwest National Laboratory, to develop a strategic approach to harvesting aged materials from NPPs. The work will identify criteria to consider when prioritizing the data needs for harvesting. The NRC is interested in engaging with other organizations to prioritize data needs for harvesting, to share information about harvested materials and those that may become available, and to identify areas of common interest. The poster will give an overview of NRC findings and recommendations related to harvesting of components and material specimens from operating NPPs and those undergoing decommissioning.

2. **Evaluation of Additive Manufacturing of Metallic Parts via Direct Metal Laser Melting**

From: RICMST Resource
Sent: Wednesday, January 24, 2018 8:09 AM
To: Bernardo, Robert <Robert.Bernardo@nrc.gov>; Hall, Victor <Victor.Hall@nrc.gov>; Wilson, Joshua <Joshua.Wilson@nrc.gov>; Jones, Heather <Heather.Jones@nrc.gov>; Bridge, Joanna <Joanna.Bridge@nrc.gov>; Mendiola, Mary <Mary.Mendiola@nrc.gov>; Zuberi, Sardar <Sardar.Zuberi@nrc.gov>; Dembek, Stephen <Stephen.Dembek@nrc.gov>; Yadav, Priya <Priya.Yadav@nrc.gov>; Gifford, Ian <Ian.Gifford@nrc.gov>; Smith, Todd <Todd.Smith@nrc.gov>; Orf, Tracy <Tracy.Orf@nrc.gov>; Cruz, Holly <Holly.Cruz@nrc.gov>; Morey, Dennis <Dennis.Morey@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Savoy, Joanne <Joanne.Savoy@nrc.gov>; Ralph, Melissa <Melissa.Ralph@nrc.gov>; King, Shannon <Shannon.King@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Armstrong, Kenneth <Kenneth.Armstrong@nrc.gov>
Cc: RICMST Resource <RICMST.Resource@nrc.gov>; Kipfer, Lorna <Lorna.Kipfer@nrc.gov>
Subject: Gentle Reminder for Presentation Submissions to OGC/QTE
Importance: High

Good Morning ePoster and Digital Presenters,

This is a gentle reminder to do the following:

- Obtain managerial approval for your ePoster and Digital Presentation
- If your poster has been selected for OGC Review please submit and cc RICMST.Resource@nrc.gov
- Submit your poster to QTE for Level 1 review (note all ePosters and Digital Presentations should be submitted to QTE for final reviews)

Refer to ePoster and Digital Presentation Flowchart for further guidance (also attached). It is important that you adhere to the due dates as close as possible. If you are unable to meet this deadline please contact me as soon as possible via email Brenett.warren@nrc.gov or call me at 415-3114.

Once again thank you,

Brenett (Bren) U. Warren
Program Specialist
Office of Nuclear Reactor Regulation
NRR/DMPS/RISB

Location: O13D5
301-415-3114
Brenett.Warren@nrc.gov

Follow us on Twitter @nrcgov_ric

ePOSTER AND DIGITAL PRESENTATION DEVELOPMENT FLOWCHART

RICMST notify Presenters of approved digital presentations (ePoster) topics and provide TRC feedback/recommendations

Title and Description

Presenters revise digital presentations (ePosters) titles and descriptions based on TRC recommendations; send to RICMST.Resource@nrc.gov ***complete by 11/27/2017***

RICMST send updated digital presentation (ePoster) titles and descriptions to QTE.Resource@nrc.gov for level 1 review ***complete by 11/28/2017***

QTE review and comment on Digital Presentations (ePosters) titles and descriptions; send to RICMST.Resource@nrc.gov ***complete by 12/04/2017***

RICMST receive QTE editorial comments on final digital presentation (ePosters) titles and descriptions; send to Presenters for consideration/acceptance ***by 12/05/2017***

Presenters confirm acceptance of QTE suggested edits to digital presentation (ePoster) titles and descriptions; update with any new information received incl confirmed Presenter names; send to RICMST.Resource@nrc.gov ***complete by 12/08/2017***

Presenters complete digital presentation (ePoster) A/V Setup Form (including standard and additional A/V equipment and requirements); send to RICMST.Resource@nrc.gov ***complete by 12/21/2017***

Slide Presentations Yes OGC Review

Due date for obtaining division-level management approval of ePoster and Digital Presentation slides ***complete by***

Once division-level approval obtained, Presenters send ePoster and digital presentations to OGCMailCenter. Resource@nrc.gov for review and cc RICMST.Resource@nrc.gov ***complete by 01/16/2018***

OGC review/comment on ePoster and Digital Presentations; and send comments to Presenter and cc RICMST.Resource@nrc.gov ***complete by 01/23/2018***

Presenters receive ePoster and Digital Presentations with OGC editorial comments, revises presentation if applicable; sends updated presentation to QTE.Resource@nrc.gov for level 1 review; and cc RICMST.Resource @nrc.gov ***complete by 01/26/2018***

QTE reviews ePoster and Digital Presentation slides and provides editorial comments to Presenter for consideration; and cc' RICMST.Resource@nrc.gov ***complete by 01/31/2018***

Presenters receive QTE comments on ePoster and Digital Presentation slides; incorporates as appropriate; and sends to Graphics.Resource@nrc.gov for optical review; cc' RICMST.Resource@nrc.gov ***complete by 02/05/2018***

Graphics reviews ePoster and Digital Presentation slides and provides comments to Presenters for consideration, and cc' RICMST.Resource @nrc.gov ***complete by 02/06/2018***

Presenters review/accept Graphics comments on ePoster and Digital Presentation slides; incorporate as appropriate; sends final to RICMST. Resource@gov ***complete by 02/09/2018***

Slide Presentations No OGC Review

Due date for obtaining division-level management approval of ePoster and Digital Presentation slides ***complete by***

Once division-level approval obtained, Presenters send ePoster and digital presentations to to QTE.Resource@nrc.gov for level 1 review; and cc RICMST.Resource @nrc.gov ***complete by 01/26/2018***

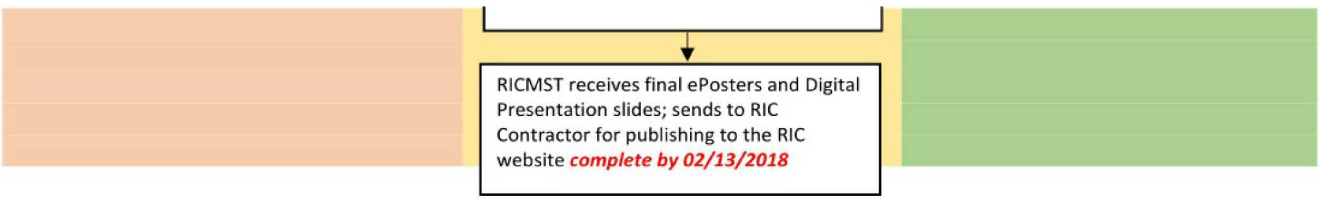
QTE reviews ePoster and Digital Presentation slides and provides editorial comments to Presenter for consideration; and cc' RICMST. Resource@nrc.gov ***complete by 01/31/2018***

Presenters receive QTE comments on ePoster and Digital Presentation slides; incorporates as appropriate; and sends to Graphics.Resource @nrc.gov for optical review; cc' RICMST.Resource@nrc.gov ***complete by 02/05/2018***

Graphics reviews ePoster and Digital Presentation slides and provides comments to Presenters for consideration; and cc' RICMST. Resource@nrc.gov ***complete by 02/06/2018***

Presenters review/accept Graphics comments on ePoster and Digital Presentation slides; incorporate as appropriate; sends final to RICMST. Resource@gov ***complete by 02/09/2018***

RICMST receives final ePosters and Digital Presentations; sends to RIC Contractor for publishing to the RIC website ***complete by 02/13/2018***


RICMST receives final ePosters and Digital Presentation slides; sends to RIC Contractor for publishing to the RIC website complete by 02/13/2018

From: Rivera, Tammie
Sent: Sun, 5 Mar 2017 20:49:10 -0500
To: Hiser, Matthew
Cc: Salley, MarkHenry;Taylor, Gabriel
Subject: RE: Component Harvesting

Yes, that works fine.

Thank you,
Tammie

From: Hiser, Matthew
Sent: Thursday, March 02, 2017 3:44 PM
To: Rivera, Tammie <Tammie.Rivera@nrc.gov>
Cc: Salley, MarkHenry <MarkHenry.Salley@nrc.gov>; Taylor, Gabriel <Gabriel.Taylor@nrc.gov>
Subject: RE: Component Harvesting

Hi Tammie,

As I mentioned in the meeting on Tuesday with Mark and Gabe, we are pretty tight on space for the workshop. We've ended up getting a couple more last-minute attendee requests from external folks, so we're a couple seats short of what we thought. We'd like it if you could participate via the webinar:
https://attendee.gotowebinar.com/register/6076202901971284226

Does that work for you?

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

From: Rivera, Tammie
Sent: Thursday, March 02, 2017 8:49 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: Component Harvesting

Thanks!

From: Hiser, Matthew
Sent: Thursday, March 02, 2017 7:15 AM
To: Rivera, Tammie <Tammie.Rivera@nrc.gov>
Subject: RE: Component Harvesting

Hi Tammie,

Yep, it's 3WFN 1C3 ☺

Thanks!
Matt

From: Rivera, Tammie
Sent: Wednesday, March 01, 2017 3:59 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: Component Harvesting

Matt,

Do you have a room location for the meeting? I see it's in 3WFN.

Thanks,
Tammie

From: Hiser, Matthew
Sent: Wednesday, March 01, 2017 11:26 AM
To: Taylor, Gabriel <Gabriel.Taylor@nrc.gov>
Cc: Rivera, Tammie <Tammie.Rivera@nrc.gov>; Salley, MarkHenry <MarkHenry.Salley@nrc.gov>
Subject: RE: Component Harvesting

Thanks for your input Gabe!

From: Taylor, Gabriel
Sent: Tuesday, February 28, 2017 3:40 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Rivera, Tammie <Tammie.Rivera@nrc.gov>; Salley, MarkHenry <MarkHenry.Salley@nrc.gov>
Subject: RE: Component Harvesting

Matt,

Few minor additions/changes for your consideration - shown in red. "Source of materials" one only has a comment.

GT

<< File: Ex-Plant Materials Harvesting Workshop_GJT.pptx >> << File: NRC Technical Data Needs for Harvesting GJT.pptx >> << File: Sources of Materials GJT.pptx >>

From: Hiser, Matthew
Sent: Tuesday, February 28, 2017 2:41 PM
To: Taylor, Gabriel <Gabriel.Taylor@nrc.gov>; Melly, Nicholas <Nicholas.Melly@nrc.gov>; Salley, MarkHenry <MarkHenry.Salley@nrc.gov>; Hamburger, Kenneth <Kenneth.Hamburger@nrc.gov>
Subject: RE: Component Harvesting

<< File: Ex-Plant Materials Harvesting Workshop.pptx >> << File: Sources of Materials.pptx >> << File: NRC Technical Data Needs for Harvesting.pptx >> << File: NRC Perspective on Harvesting Experience and Lessons Learned.pptx >>

Sharing the electronic versions of the slides for your awareness. Any additional input on the data needs or experience / lessons learned slides would be welcome.

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

-----Original Appointment-----
From: Taylor, Gabriel
Sent: Wednesday, February 22, 2017 11:37 PM
To: Taylor, Gabriel; Hiser, Matthew; Melly, Nicholas
Subject: Component Harvesting
When: Tuesday, February 28, 2017 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: HQ-TWFN-10A73-8p

Meeting to discuss options for harvesting electrical distribution components to support fire research activities.

Note to requester: Attachments are immediately following.

From: Taylor, Gabriel
Sent: Tue, 28 Feb 2017 15:39:50 -0500
To: Hiser, Matthew
Cc: Rivera, Tammie;Salley, MarkHenry
Subject: RE: Component Harvesting
Attachments: Ex-Plant Materials Harvesting Workshop_GJT.pptx, NRC Technical Data Needs for Harvesting GJT.pptx, Sources of Materials GJT.pptx

Matt,

Few minor additions/changes for your consideration - shown in red. "Source of materials" one only has a comment.

GT

Note to requester: The 3 boxes with the red Xs inside represent the icons for the 3 Power Point Presentations inserted in the email.

From: Hiser, Matthew
Sent: Tuesday, February 28, 2017 2:41 PM
To: Taylor, Gabriel <Gabriel.Taylor@nrc.gov>; Melly, Nicholas <Nicholas.Melly@nrc.gov>; Salley, MarkHenry <MarkHenry.Salley@nrc.gov>; Hamburger, Kenneth <Kenneth.Hamburger@nrc.gov>
Subject: RE: Component Harvesting

<< File: Ex-Plant Materials Harvesting Workshop.pptx >> << File: Sources of Materials.pptx >> << File: NRC Technical Data Needs for Harvesting.pptx >> << File: NRC Perspective on Harvesting Experience and Lessons Learned.pptx >>

Sharing the electronic versions of the slides for your awareness. Any additional input on the data needs or experience / lessons learned slides would be welcome.

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

-----Original Appointment-----
From: Taylor, Gabriel
Sent: Wednesday, February 22, 2017 11:37 PM
To: Taylor, Gabriel; Hiser, Matthew; Melly, Nicholas
Subject: Component Harvesting
When: Tuesday, February 28, 2017 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: HQ-TWFN-10A73-8p

Meeting to discuss options for harvesting electrical distribution components to support fire research activities.

Sources of Materials

Metals

- Examples of harvested materials used in NRC research programs:
  - Boral from Zion
  - SS plate and welds from Zorita
    - 304SS ranging from <1 to 50 dpa; SS weld up to 1 dpa
  - PWSCC
    - Alloy 600 J-groove weld from Davis-Besse
    - Alloy 600 CRD nozzle from North Anna
    - Alloy 182/82 from VC Summer
  - RPV
    - Shoreham, Midland

Electrical

- ZION
  - 4.16kV non-segregated bus duct
    - Used in NRC / OECD High Energy Arc Fault Testing
- Bellefonte
  - 8 Electrical enclosures
    - Used in NRC very early warning fire detection testing (NUREG-2180)
    - Used in NRC heat release rate testing (NUREG/CR-7197)

Concrete

Recently Shutdown U.S. Plants

Plant	Design	Size (MWt)	Years in Operation	Shutdown Date	Notes
Kewaunee	W 2-loop	1772	39	2013	
SONGS 2/3	CE 2-loop	3438	31/30	2013	
Crystal River 3	B&W	2609	36	2013	
Vermont Yankee	BWR-4/Mark-1	1912	42	2015	
Fort Calhoun	CE 2-loop	1500	43	2016	

Planned Shutdown U.S. Plants

Plant	Design	Size (MWt)	Years in Operation	Planned Shutdown	Notes
Palisades	CE	2565	47	2018	
Pilgrim	BWR-3/Mark-1	2028	47	2019	
Oyster Creek	BWR-2/Mark-1	1930	50	2019	
Indian Point 2/3	W 4-loop	3216	48/46	2021	
Diablo Canyon 1/2	W 4-loop	3411	40	2024-5	

Additional Information from Plants

- Point of Contact
- Material information
  - Fabrication records, CMTRs
- Operating history
  - Temperature and fluence for components of interest
- Inspection records
  - Components with known flaws

NRC High-Priority Data Needs for Harvesting

Metals

- Selected areas of interest for harvested materials:
  - High fluence reactor internals
    - >50 dpa 304 SS from high core outlet temp plant
    - Bounding temperature and high fluence for void swelling
  - Thermally aged unirradiated CASS
    - >30 years at ~320°C; Validate accelerated aging data
  - Moderate fluence (1-2 dpa) CASS
    - Bolster technical basis for embrittlement in this fluence range

Metals

- RPV
  - High fluence vessel with relatively high levels of minor alloying elements (Mn, P, etc.)
  - Through thickness section
    - Measure fluence, toughness, and chemistry as a function of depth
    - Validate fluence calculations
- Components with known flaws
  - Example: weld overlays over known flaws
  - Could be used for NDE evaluations or to assess effectiveness of mitigation techniques
- Components with limiting fatigue life
  - Confirm fatigue calculations are accurate by inspecting for flaws

Electrical

- Cables
  - Power cables energized and energized in normal operation
  - Cables from in containment applications
  - Cables protected with fire retardant coating
- Electrical components
  - 1E MOVs from harsh and mild environments
  - 1E Air operated valves; 4160 1E breakers
  - 1E Molded case breakers 480V, 250V DC, 125 VDC,
  - 1E Relays from mild environment GE – HFA, Agastat timing relays, any from Westinghouse, Potter Brumfield, Stuthers Dunn etc.,
  - Electrical penetrations
  - Batteries
- Fire research interest
  - Electrical enclosures
    - Distribution : switchgear, MCCs, LCs | Control : Horseshoe, SSCP, ASP, etc.

Concrete

- High fluence irradiated concrete?
- ASR?
- Large sections for structural testing?

Ex-Plant Materials Harvesting Workshop

March 7-8, 2017

USNRC HQ

Rockville, MD, USA

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

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 TG3
- 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

Slide 3

TG3 Not sure what "applicability" is refering to here. Suggest deleting "the applicability of the"
Taylor, Gabriel, 2/28/2017

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

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

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

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
- 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

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

From: Taylor, Gabriel
Sent: Tue, 28 Feb 2017 15:15:17 -0500
To: Hiser, Matthew
Cc: Salley, MarkHenry;Rivera, Tammie
Subject: RE: Component Harvesting

Thanks Matt. I will review and provide feedback. Also, I didn't realize that this workshop was next week and have a conflict. However, we will be sending Tammie Rivera, I will bring her up to speed to support.

Thanks,
GT

From: Hiser, Matthew
Sent: Tuesday, February 28, 2017 2:41 PM
To: Taylor, Gabriel <Gabriel.Taylor@nrc.gov>; Melly, Nicholas <Nicholas.Melly@nrc.gov>; Salley, MarkHenry <MarkHenry.Salley@nrc.gov>; Hamburger, Kenneth <Kenneth.Hamburger@nrc.gov>
Subject: RE: Component Harvesting

<< File: Ex-Plant Materials Harvesting Workshop.pptx >> << File: Sources of Materials.pptx >> << File: NRC Technical Data Needs for Harvesting.pptx >> << File: NRC Perspective on Harvesting Experience and Lessons Learned.pptx >>

Sharing the electronic versions of the slides for your awareness. Any additional input on the data needs or experience / lessons learned slides would be welcome.

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

-----Original Appointment-----
From: Taylor, Gabriel
Sent: Wednesday, February 22, 2017 11:37 PM
To: Taylor, Gabriel; Hiser, Matthew; Melly, Nicholas

Subject: Component Harvesting
When: Tuesday, February 28, 2017 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: HQ-TWFN-10A73-8p

Meeting to discuss options for harvesting electrical distribution components to support fire research activities.

From: Hiser, Matthew
Sent: Tue, 28 Feb 2017 19:41:09 +0000
To: Taylor, Gabriel;Melly, Nicholas;Salley, MarkHenry;Hamburger, Kenneth
Subject: RE: Component Harvesting
Attachments: Ex-Plant Materials Harvesting Workshop.pptx, Sources of Materials.pptx, NRC Technical Data Needs for Harvesting.pptx, NRC Perspective on Harvesting Experience and Lessons Learned.pptx

Note to requester: The 4 boxes with the red Xs inside represent the icons for the 4 Power Point Presentations inserted in the email.
Attachments are immediately following.

Sharing the electronic versions of the slides for your awareness. Any additional input on the data needs or experience / lessons learned slides would be welcome.

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

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From: Taylor, Gabriel
Sent: Wednesday, February 22, 2017 11:37 PM
To: Taylor, Gabriel; Hiser, Matthew; Melly, Nicholas
Subject: Component Harvesting
When: Tuesday, February 28, 2017 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: HQ-TWFN-10A73-8p

Meeting to discuss options for harvesting electrical distribution components to support fire research activities.

NRC Perspective on Harvesting Experience and Lessons Learned

NRC Harvesting Experience

- RPV materials
  - Shoreham, Midland
- Reactor vessel head CRDM penetrations
  - North Anna, Davis-Besse
- Pressurizer from St. Lucie
- Piping from VC Summer, NMP, Oconee
- Reactor internals from Zorita
  - Joint harvesting and testing project with EPRI and international
- Neutron absorbers from Zion
  - Harvesting coordinated with DOE and EPRI; Independent NRC testing
- Concrete from Zorita
- Cables from Zion and Crystal River

Previous Benefits of Harvesting

- Reduce unnecessary conservatism
  - Flaw distributions and Master Curve information came from harvested materials to support PTS rule
- Understand in-service flaws
  - Mockups for NDE qualification
  - Leak rate methodology from studying in-service flaws

Technical Lessons Learned

- Harvesting can provide highly representative aged materials for research
  - May be only practical source of representative aged materials, particularly if irradiation and temperature are important factors
    - Achieving high fluence levels with representative irradiation conditions through other means is very challenging
  - May be able to use limited harvested materials to validate larger accelerated aging data set
- Important to gain as much information as possible in advance before committing to specific harvesting project
  - Ideally a bounding, yet broadly representative, material/environment
  - Understand material information (CMTRs if available) and plant operating conditions

Logistical Lessons Learned

- Harvesting is an expensive, time-consuming effort
  - Must balance cost with potential benefits carefully
  - High technical relevance of materials is needed to ensure value
- Leveraging resources with other research organizations helps mitigate cost challenges
  - Can introduce challenges for testing when aligning research priorities and interests of multiple organizations
  - May be needed, particularly for expensive testing of irradiated materials
- Transporting irradiated materials, particularly internationally, is cumbersome and time-consuming
  - Avoiding extra transport, especially between countries, is highly recommended

NRC High-Priority Data Needs for Harvesting

Metals

- Selected areas of interest for harvested materials:
  - High fluence reactor internals
    - >50 dpa 304 SS from high core outlet temp plant
    - Bounding temperature and high fluence for void swelling
  - Thermally aged unirradiated CASS
    - >30 years at ~320°C; Validate accelerated aging data
  - Moderate fluence (1-2 dpa) CASS
    - Bolster technical basis for embrittlement in this fluence range

Metals

- RPV
  - High fluence vessel with relatively high levels of minor alloying elements (Mn, P, etc.)
  - Through thickness section
    - Measure fluence, toughness, and chemistry as a function of depth
    - Validate fluence calculations
- Components with known flaws
  - Example: weld overlays over known flaws
  - Could be used for NDE evaluations or to assess effectiveness of mitigation techniques
- Components with limiting fatigue life
  - Confirm fatigue calculations are accurate by inspecting for flaws

Electrical

- Cables
  - Power cables energized and energized in normal operation
  - Cables from in containment applications
  - Cables protected with fire retardant coating
- Electrical components
  - 1E MOVs from harsh and mild environments
  - 1E Air operated valves; 4160 1E breakers
  - 1E Molded case breakers 480V, 250V DC, 125 VDC,
  - 1E Relays from mild environment GE – HFA, Agastat timing relays, any from Westinghouse, Potter Brumfield, Stuthers Dunn etc.,
  - Electrical penetrations
  - Batteries
- Fire research interest
  - Any electrical component containing aluminum
  - Switchgear and other assorted electrical enclosures

Concrete

- High fluence irradiated concrete?
- ASR?
- Large sections for structural testing?

Sources of Materials

Metals

- Examples of harvested materials used in NRC research programs:
  - Boral from Zion
  - SS plate and welds from Zorita
    - 304SS ranging from <1 to 50 dpa; SS weld up to 1 dpa
  - PWSCC
    - Alloy 600 J-groove weld from Davis-Besse
    - Alloy 600 CRD nozzle from North Anna
    - Alloy 182/82 from VC Summer
  - RPV
    - Shoreham, Midland

Electrical

Concrete

Recently Shutdown U.S. Plants

Plant	Design	Size (MWt)	Years in Operation	Shutdown Date	Notes
Kewaunee	W 2-loop	1772	39	2013	
SONGS 2/3	CE 2-loop	3438	31/30	2013	
Crystal River 3	B&W	2609	36	2013	
Vermont Yankee	BWR-4/Mark-1	1912	42	2015	
Fort Calhoun	CE 2-loop	1500	43	2016	

Planned Shutdown U.S. Plants

Plant	Design	Size (MWt)	Years in Operation	Planned Shutdown	Notes
Palisades	CE	2565	47	2018	
Pilgrim	BWR-3/Mark-1	2028	47	2019	
Oyster Creek	BWR-2/Mark-1	1930	50	2019	
Indian Point 2/3	W 4-loop	3216	48/46	2021	
Diablo Canyon 1/2	W 4-loop	3411	40	2024-5	

Additional Information from Plants

- Point of Contact
- Material information
  - Fabrication records, CMTRs
- Operating history
  - Temperature and fluence for components of interest
- Inspection records
  - Components with known flaws

Ex-Plant Materials Harvesting Workshop

March 7-8, 2017

USNRC HQ

Rockville, MD, USA

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

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

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

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

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

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
- 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

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

From: Hiser, Matthew
Sent: Wed, 1 Nov 2017 16:15:38 +0000
To: Purtscher, Patrick
Subject: RE: contact at INL other than John Jackson

Hi Pat,

The other individual from INL that participated via webinar in the harvesting workshop was Kelly Cunningham (kelly.cunningham@inl.gov).

I think she's in charge of the day-to-day for the specimen library…

Thanks!
Matt

From: Purtscher, Patrick
Sent: Wednesday, November 01, 2017 11:44 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: contact at INL other than John Jackson

Do you have an email address for someone other than John who is associated with the Nuclear Materials Library?

From: Tregoning, Robert
Sent: Tue, 22 Nov 2016 12:20:41 -0600
To: Purtscher, Patrick;Hiser, Matthew
Subject: RE: contact with Japanese for harvesting

I think that's an excellent idea……

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: Purtscher, Patrick
Sent: Tuesday, November 22, 2016 8:43 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Subject: contact with Japanese for harvesting

In MRP-227 Rev 1, the industry has this for OE.

Beginning in 2004, replacement of the complete internals (upper and lower internals) at three Japanese PWRs has also been performed. It has been stated that these replacements have been performed for the following reasons:
1. To keep and improve operational reliability, safety, and a high load factor for the nuclear power units
2. To maintain the plant against aging degradation of the PWR internals
3. To mitigate degradation risks that would rise with increasing operational time in the future

This would seem to be a great resource if still available.

When we contact the Japanese about the March workshop, we could specifically ask about these components?

Pat

Patrick Purtscher
Materials Engineer
Nuclear Regulatory Regulation
Division of Engineering
Vessel & Internals Branch
301-415-3942

From: Wong, Albert
Sent: Thu, 29 Jun 2017 13:58:25 -0400
To: Hiser, Matthew
Subject: RE: Contract with RES

Got it, many thanks for the summary report.

From: Hiser, Matthew
Sent: Thursday, June 29, 2017 6:55 AM
To: Wong, Albert <Albert.Wong@nrc.gov>
Subject: RE: Contract with RES

Hi Albert,

I forwarded the email from May 31 on the workshop summary report.

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

From: Wong, Albert
Sent: Wednesday, June 28, 2017 5:24 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: Contract with RES

Thank you Matt, any update on the harvest workshop summary? Thx

---

From: Hiser, Matthew
Sent: Tuesday, June 27, 2017 2:28 PM
To: Bloom, Steven <Steven.Bloom@nrc.gov>; Klein, Paul <Paul.Klein@nrc.gov>
Cc: Wong, Albert <Albert.Wong@nrc.gov>
Subject: RE: Contract with RES

Hi guys,

The contract award document is attached. The initial PoP ended this September, but we put in an extension through Sept. 2018. I am following up with the CO to confirm that extension has been processed.

Thanks!
Matt

From: Bloom, Steven
Sent: Tuesday, June 27, 2017 12:51 PM
To: Klein, Paul <Paul.Klein@nrc.gov>
Cc: Wong, Albert <Albert.Wong@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: Contract with RES

Albert,

Can you find out the contract this is associated with.

Thank you,

Steve

Steven Bloom, Branch Chief
Chemical, Corrosion, and Steam Generator Branch (MCCB)
Division of License Renewal (DLR)
Office of Nuclear Reactor Regulation (NRR)
301-415-2431 (W)
(b)(6) [redacted] (Cell)
O-11 E24
M/S O-11 F-1

From: Klein, Paul
Sent: Tuesday, June 27, 2017 12:40 PM
To: Bloom, Steven <Steven.Bloom@nrc.gov>
Cc: Wong, Albert <Albert.Wong@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: Contract with RES

The RES contract is with EMS Corp. The technical expert that helps us is Dr. Robert Litman. The RES POC is Matt Hiser.

From: Bloom, Steven
Sent: Tuesday, June 27, 2017 12:26 PM
To: Klein, Paul <Paul.Klein@nrc.gov>
Cc: Wong, Albert <Albert.Wong@nrc.gov>
Subject: Contract with RES

Paul,

Do you know the name of the individual we have a contract with who will be doing the chemical review work you mentioned at the branch meeting yesterday.

Steve

Steven Bloom, Branch Chief
Chemical, Corrosion, and Steam Generator Branch (MCCB)
Division of License Renewal (DLR)
Office of Nuclear Reactor Regulation (NRR)
301-415-2431 (W)
(b)(6) [redacted] (Cell)
O-11 E24
M/S O-11 F-1

From: Hiser, Matthew
Sent: Tue, 4 Sep 2018 15:58:13 +0000
To: Tregoning, Robert
Subject: RE: Copy of Harvesting Needs Prioritization 8-31-18 rlt.xlsx

Thanks Rob!

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

From: Tregoning, Robert
Sent: Tuesday, September 04, 2018 9:59 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: Copy of Harvesting Needs Prioritization 8-31-18 rlt.xlsx

Matt:

Here's my stab at RPV. There are certainly several other rows that could be added to list, but I'll let Mark take first stab at that.

Cheers,

Rob

From: Hiser, Matthew
Sent: Wed, 6 Dec 2017 16:24:54 +0000
To: Audrain, Margaret
Subject: RE: DE Briefing on Harvesting

LOL, sounds good!

From: Audrain, Margaret
Sent: Wednesday, December 06, 2017 11:25 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: DE Briefing on Harvesting

(b)(6)

Yup. It actually works better than Monday because I forgot I have a [redacted] Monday afternoon! Derp

-------- Original Message --------
From: "Hiser, Matthew" <Matthew.Hiser@nrc.gov>
Date: Wed, December 06, 2017 11:21 AM -0500
To: "Frankl, Istvan" <Istvan.Frankl@nrc.gov>
CC: "Audrain, Margaret" <Margaret.Audrain@nrc.gov>, "Purtscher, Patrick" <Patrick.Purtscher@nrc.gov>
Subject: RE: DE Briefing on Harvesting

Hi Steve,

If it's OK with you, I'd prefer to keep it to a one-pager (or 1+ pager) and not go to the effort making slides. My updated one-pager addressing your comments / accepting your edits is attached.

I scheduled this for 30 minutes at Rob's suggestion. He didn't think they would need longer than that, although perhaps this is new material for Chris. Brian accepted the meeting request for Monday, but I will try to reschedule, perhaps for Friday the 15th if you will be in the office. That shows free on everyone's calendar. I'll work with the AAs. (Meg and Pat, can you do next Friday?)

Thanks!
Matt

From: Frankl, Istvan
Sent: Wednesday, December 06, 2017 9:24 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: DE Briefing on Harvesting
Importance: High

Matt,

I have attached my revisions and comments.

Are you planning to draft slides as well? Please see my comment on this in the attachment.

Also, Chris declined the briefing scheduled for Monday. Usually, briefings like this cannot be completed in less than an hour. I would have liked the briefing to take place before the ANL trip but please try to reschedule to address Chris' request.

Thanks,

Steve

From: Hiser, Matthew
Sent: Friday, December 01, 2017 3:33 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: DE Briefing on Harvesting

Hi Steve,

I have attached a draft one-pager that could be used to brief Brian and Chris on the harvesting efforts in the context of their questions regarding the ANL travel. Do you mind if I go ahead and schedule something with them for next week?

Meg, Pat, and Rob, please feel free to edit / comment on this draft one-pager as necessary.

Thanks!
Matt

From: Frankl, Istvan
Sent: Tue, 5 Dec 2017 20:02:18 +0000
To: Hiser, Matthew
Subject: RE: DE Briefing on Harvesting
Importance: High

The trip itself was approved, so the timing of the briefing is not critical. Please schedule for early next week when Brian is back and available.

Monday would be best. (Pat is traveling to ANL on Tuesday.)

Thanks,

Steve

From: Hiser, Matthew
Sent: Tuesday, December 05, 2017 2:51 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: DE Briefing on Harvesting

Hi Steve,

Your understanding is correct according to Cassandra. Should we proceed with just Chris this week or try for early next week?

Thanks!
Matt

From: Frankl, Istvan
Sent: Tuesday, December 05, 2017 12:45 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: DE Briefing on Harvesting
Importance: High

My understanding is that Brian will be out this week starting tomorrow but please confirm with the AAs and schedule the briefing.

Thanks,

Steve

From: Hiser, Matthew
Sent: Tuesday, December 05, 2017 8:11 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: RE: DE Briefing on Harvesting

Hi Steve,

Would you like me to go ahead and schedule this briefing? As of now, there is still a good time on Thursday afternoon…

Thanks!
Matt

From: Hiser, Matthew
Sent: Friday, December 01, 2017 3:33 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
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Thanks!
Matt

From: Frankl, Istvan
Sent: Wed, 6 Dec 2017 19:09:14 +0000
To: Hiser, Matthew
Cc: Audrain, Margaret;Purtscher, Patrick
Subject: RE: DE Briefing on Harvesting

Matt,

Thanks for addressing my comments.

As discussed, I can call in on Friday, December 15.

Steve

From: Hiser, Matthew
Sent: Wednesday, December 06, 2017 11:21 AM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Cc: Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: DE Briefing on Harvesting

Hi Steve,

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I scheduled this for 30 minutes at Rob's suggestion. He didn't think they would need longer than that, although perhaps this is new material for Chris. Brian accepted the meeting request for Monday, but I will try to reschedule, perhaps for Friday the 15th if you will be in the office. That shows free on everyone's calendar. I'll work with the AAs. (Meg and Pat, can you do next Friday?)

Thanks!
Matt

From: Frankl, Istvan
Sent: Wednesday, December 06, 2017 9:24 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: DE Briefing on Harvesting
Importance: High

Matt,

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Are you planning to draft slides as well? Please see my comment on this in the attachment.

Also, Chris declined the briefing scheduled for Monday. Usually, briefings like this cannot be completed in less than an hour. I would have liked the briefing to take place before the ANL trip but please try to reschedule to address Chris' request.

Thanks,

Steve

From: Hiser, Matthew
Sent: Friday, December 01, 2017 3:33 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>
Subject: DE Briefing on Harvesting

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Meg, Pat, and Rob, please feel free to edit / comment on this draft one-pager as necessary.

Thanks!
Matt

From: Hiser, Matthew
Sent: Thu, 9 Mar 2017 13:37:13 +0000
To: Oberson, Greg
Subject: RE: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS

It went fairly well – more as I expected than I hoped. The overall tone and perspective from DOE and EPRI was more sobered from the challenges of recent programs than excited to seize new opportunities. That also probably relates to the fact that everyone's budgets are flat or declining. There was a bit of a proxy discussion throughout with EPRI and industry complaining about what was really needed to support SLR. That was definitely not what we were hoping for, but you can only do so much to keep things on topic.

We learned a lot from DOE and EPRI and others sharing their experience as well as the Kewaunee and EnergySolutions representatives who could give us a better non-researcher boots-on-the-ground perspective.

Overall, it was productive but not going to singlehandedly kick off a wave of new joint harvesting projects…

From: Oberson, Greg
Sent: Thursday, March 09, 2017 8:30 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS

Thanks, I didn't give him my slides yet but I will. How did the workshop go? I was only able to listen in for very short time on Wednesday?

From: Hiser, Matthew
Sent: Thursday, March 09, 2017 7:17 AM
To: Oberson, Greg <Greg.Oberson@nrc.gov>
Subject: RE: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS

Looks good to me – thanks Greg! Have we shared the slides from our briefing with Brian Thomas to Bruce so he can add any CIB-specific input that we may have missed?

From: Lin, Bruce
Sent: Wednesday, March 08, 2017 1:31 PM
To: Oberson, Greg <Greg.Oberson@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS

Looks good to me. Just one comment. Do we want to include completed activities? If yes, I suggest the following changes.

PURPOSE:

Provide an ~~update on the status of current work~~ overview of research activities and discuss potential future research on aging management of spent fuel dry storage systems (DSS)

EXPECTED OUTCOMES

- Common understanding of DSS aging management research activities and schedule.

- Gain management insights and recommendations on path-forward.

PROCESS

- Discuss ~~status and schedule of~~ completed and on-going NRC research activities related to the management of materials degradation in DSS:
    - Aging Management Tables,
    - Chloride-Induced Stress Corrosion Cracking, and
    - Non-Destructive Examination.

- Discuss proposed tasks and resources in the forthcoming new User Need Request from NMSS/DSFM.

- Obtain management thoughts on staff's recommendations on forward-looking activities.

From: Oberson, Greg

Sent: Wednesday, March 08, 2017 12:52 PM
To: Iyengar, Raj <Raj.Iyengar@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Lin, Bruce <Bruce.Lin@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS

Please provide feedback.

Thanks,
Greg
<< File: POP - Spent Fuel Aging Management Briefing-March 2017.docx >>

From: Iyengar, Raj
Sent: Wednesday, March 08, 2017 12:30 PM
To: Oberson, Greg <Greg.Oberson@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Lin, Bruce <Bruce.Lin@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS

<< File: POP - SLR Briefing-Oct26.docx >>

From: Oberson, Greg
Sent: Wednesday, March 08, 2017 12:24 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Lin, Bruce <Bruce.Lin@nrc.gov>; Iyengar, Raj <Raj.Iyengar@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Subject: RE: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS

Hello,
Does anyone have a POP used for a previous briefing for Mike so I can copy the format?

Thanks,
Greg

-----Original Appointment-----
From: Flory, Shirley
Sent: Wednesday, March 08, 2017 10:23 AM
To: Flory, Shirley; Weber, Michael; Boland, Anne; Thomas, Brian; Frankl, Istvan; Lin, Bruce;

Oberson, Greg; Nakoski, John; Iyengar, Raj; Hiser, Matthew
Subject: DE STAFF BRIEFING ON AGING MANAGEMENT OF SPENT FUEL DRY STORAGE SYSTEMS
When: Monday, March 27, 2017 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: TWFN 9A1

<< Message: briefing for Mike and Anne >>

From: Peters, Sean
Sent: Fri, 27 Oct 2017 09:15:19 -0400
To: Hiser, Matthew
Cc: Kipfer, Lorna;Warren, Brenett
Subject: RE: Decision by the RIC Committee

OK. Thanks Matt.

From: Hiser, Matthew
Sent: Friday, October 27, 2017 7:03 AM
To: Peters, Sean <Sean.Peters@nrc.gov>; Oberson, Greg <Greg.Oberson@nrc.gov>
Cc: Boyce (RES), Tom <Tom.Boyce@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: Decision by the RIC Committee

Hi Sean,

Thank you for reaching out about this option for the harvesting topic. After discussing with other staff involved in this effort, we agreed it is not the best option to have a RIC session. The primary reason is that we just hosted a workshop on this topic with most of the stakeholders back in March of this year. A RIC session would probably not add much value and largely repeat the discussion from the workshop.

We do think a poster could be a useful method to further publicizing of the NRC's interest in harvesting, but don't believe a RIC session would be most appropriate given the recently held workshop on the same topic.

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

From: Peters, Sean
Sent: Wednesday, October 25, 2017 1:48 PM
To: Oberson, Greg <Greg.Oberson@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Boyce, Tom <Tom.Boyce@nrc.gov>
Subject: Decision by the RIC Committee

Hey Greg and Matt,

Your poster session on harvesting of aged materials has been recommended for acceptance for the 2018 RIC. However, the RIC Technical Review Committee thinks this may be a good topic for converting it into a technical session.

Please let me know if you would like to convert it to a technical session. If so, please provide your updated Submission Form with the revised description by COB 10/31/17.

Thanks!
Sean

From: Frankl, Istvan
Sent: Wed, 25 Oct 2017 14:05:41 -0400
To: Tregoning, Robert;Hiser, Matthew;Audrain, Margaret;Purtscher, Patrick
Subject: RE: Decision by the RIC Committee

Are there any actions from the workshop that could be followed up at the RIC? Such as, a status update? Also, is there value for rolling out the harvesting plan to the general public?

Steve

From: Tregoning, Robert
Sent: Wednesday, October 25, 2017 2:02 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

This smacks of not having enough nominated RIC sessions as was the case last year. What are everyone's thoughts? What could we hope to achieve with a RIC session that we couldn't achieve with the workshop last March?

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: Hiser, Matthew
Sent: Wednesday, October 25, 2017 1:56 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: FW: Decision by the RIC Committee

From: Peters, Sean
Sent: Wednesday, October 25, 2017 1:48 PM
To: Oberson, Greg <Greg.Oberson@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>
Cc: Boyce, Tom <Tom.Boyce@nrc.gov>
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Hey Greg and Matt,

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Please let me know if you would like to convert it to a technical session. If so, please provide your updated Submission Form with the revised description by COB 10/31/17.

Thanks!
Sean

From: Frankl, Istvan
Sent: Thu, 26 Oct 2017 16:45:52 -0400
To: Hiser, Matthew
Subject: RE: Decision by the RIC Committee

I support the collective recommendation.

Thanks,

Steve

From: Hiser, Matthew
Sent: Thursday, October 26, 2017 1:13 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: FW: Decision by the RIC Committee

Hi Steve,

If you're OK with it, I'll feed back to Sean that we'll plan to stick with just a poster…

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

From: Audrain, Margaret
Sent: Thursday, October 26, 2017 8:20 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

I also agree.

-------- Original Message --------
From: "Tregoning, Robert" <Robert.Tregoning@nrc.gov>
Date: Thu, October 26, 2017 7:47 AM -0400
To: "Hiser, Matthew" <Matthew.Hiser@nrc.gov>, "Frankl, Istvan" <Istvan.Frankl@nrc.gov>, "Audrain, Margaret" <Margaret.Audrain@nrc.gov>, "Purtscher, Patrick" <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

I agree with you inclination…

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: Thursday, October 26, 2017 7:12 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

Any other thoughts on this? Unless others feel very strongly, I'm inclined to say we'd rather keep it as a poster and explain that we just held a workshop earlier this year on this very topic…

Thanks!
Matt

From: Hiser, Matthew
Sent: Wednesday, October 25, 2017 2:20 PM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

I generally agree with Rob. I see this as more repeating the workshop in a less effective setting than anything else. I think if we want to do a poster at RIC, that would be a reasonable follow-up, especially given the heavy industry attendance at RIC, but I don't think a whole session is justified or worthwhile… just my two cents. I'm sure Sean and those on the RIC committee are not aware that we just held a separate workshop on this topic earlier this year…

Thanks!
Matt

From: Tregoning, Robert
Sent: Wednesday, October 25, 2017 2:16 PM
To: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

Steve:

My opinion on your questions below (in red), but I'd obviously like others to weigh in.

RT

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: Frankl, Istvan
Sent: Wednesday, October 25, 2017 2:06 PM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Matthew <Matthew.Hiser@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

Are there any actions from the workshop that could be followed up at the RIC?
The outstanding actions mainly involve both internal follow-up and follow-up with external organizations. It's not clear to me how the RIC could be used to facilitate that
Such as, a status update?
We could provide a summary of the workshop, a summary of the PNNL harvesting plan, and a status update. This is just an NRC session at that point which is not that useful. To have a good session, we would want to bring in EPRI, DOE, and some international folks to talk about their plans in this area. This is essentially what we did with the workshop.

Also, is there value for rolling out the harvesting plan to the general public?
None that I can see other than to share with the public that we're doing this. It's not a particularly controversial topic nor is it one that will likely generate much public interest. In short, I don't see a significant benefit from our end but I can always be convinced.

Steve

From: Tregoning, Robert
Sent: Wednesday, October 25, 2017 2:02 PM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Frankl, Istvan <Istvan.Frankl@nrc.gov>; Audrain, Margaret <Margaret.Audrain@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Decision by the RIC Committee

This smacks of not having enough nominated RIC sessions as was the case last year. What are everyone's thoughts? What could we hope to achieve with a RIC session that we couldn't achieve with the workshop last March?

Cheers,

Rob

Robert Tregoning
Technical Advisor for Materials
US Nuclear Regulatory Commission
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11545 Rockville Pike
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From: Hiser, Matthew
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Subject: FW: Decision by the RIC Committee

From: Peters, Sean
Sent: Wednesday, October 25, 2017 1:48 PM
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Cc: Boyce, Tom <Tom.Boyce@nrc.gov>
Subject: Decision by the RIC Committee

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Please let me know if you would like to convert it to a technical session. If so, please provide your updated Submission Form with the revised description by COB 10/31/17.

Thanks!
Sean

From: Hiser, Matthew
Sent: Fri, 30 Jun 2017 13:54:34 +0000
To: Purtscher, Patrick
Subject: RE: did you see Pradeep on Monday?

Hi Pat,

I did see him – he thought he had sent us the harvesting report back in May, but I showed him that I didn't have anything in my email, so perhaps it didn't send. He should follow up, but maybe we should send him a reminder…

The NDE class was very good – I learned a bit more about UT than I knew previously…

Thanks!
Matt

From: Purtscher, Patrick
Sent: Friday, June 30, 2017 9:50 AM
To: Hiser, Matthew
Subject: did you see Pradeep on Monday?

How were the classes?

Pat

From: Moyer, Carol
Sent: Wed, 11 Oct 2017 08:33:38 -0400
To: Hiser, Matthew
Subject: RE: Discuss PLiM Presentation on Harvesting

☺

From: Hiser, Matthew
Sent: Wednesday, October 11, 2017 8:33 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Discuss PLiM Presentation on Harvesting

OK, nevermind – apparently I was left off the original Thursday AM scheduler, it all makes much more sense now…

From: Hiser, Matthew
Sent: Wednesday, October 11, 2017 8:25 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Discuss PLiM Presentation on Harvesting

Oh, I see - I scheduled it for Thursday PM because that's when there was availability for everyone involved. There's only one small 30-minute window Thursday AM.

From: Tregoning, Robert
Sent: Wednesday, October 11, 2017 8:22 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Discuss PLiM Presentation on Harvesting

No, I meant tomorrow morning and just mistyped Thursday….

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: Wednesday, October 11, 2017 8:21 AM
To: Tregoning, Robert <Robert.Tregoning@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Discuss PLiM Presentation on Harvesting

Hi Rob,

I think tomorrow is Allen's last day in the office. Are you referring to next Tuesday?

I could shorten it to 2:30-3:00 right before the IASCC code case meeting.

Thanks!
Matt

From: Tregoning, Robert
Sent: Wednesday, October 11, 2017 7:01 AM
To: Hiser, Matthew <Matthew.Hiser@nrc.gov>; Hiser, Allen <Allen.Hiser@nrc.gov>; Moyer, Carol <Carol.Moyer@nrc.gov>; Hull, Amy <Amy.Hull@nrc.gov>; Purtscher, Patrick <Patrick.Purtscher@nrc.gov>
Subject: RE: Discuss PLiM Presentation on Harvesting

Matt:

Can we just cover this in the Tuesday AM meeting that we're already having?

RT

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: Hiser, Matthew
Sent: Tuesday, October 10, 2017 4:49 PM
To: Hiser, Allen; Tregoning, Robert; Moyer, Carol; Hull, Amy; Purtscher, Patrick
Subject: Discuss PLiM Presentation on Harvesting
When: Thursday, October 12, 2017 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: HQ-OWFN-08B02-12p

From: Moyer, Carol
Sent: Wed, 21 Feb 2018 12:51:16 +0000
To: Hull, Amy
Subject: RE: Draft Agenda for NRC-DOE Informal Information Exchange

Thanks for your input, Amy. I will look at these suggestions, and think about how much we can pack into an afternoon.

Carol

From: Hull, Amy
Sent: Wednesday, February 21, 2018 7:40 AM
To: Moyer, Carol <Carol.Moyer@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: RE: Draft Agenda for NRC-DOE Informal Information Exchange

Looks good. How about adding agenda item on advanced manufacturing for reactor materials & components.– because you have representation from ORNL, INL, and ANL – and now all 3 (ANL has been playing catch up after they had >20 !! people listening in to our Nov public workshop) are interested in this. Mitch Farmer is from the part of ANL where this work is being targeted. Maybe also have NRC/DOE talk on databases, spreadsheets, OSTI, etc. The SLR degradation scenarios spreadsheet is large, very useful, and publicly available. We need to make progress on the harvesting database, per UNR deliverables.
".....database for sources of materials for harvesting, which could include both previously harvested materials and those available for future harvesting. This database would allow for aligning high-priority data needs to the available sources of materials. The level of detail for the database should be appropriate for the factors influencing decisionmaking. The NRC is interested in engaging with other organizations in developing the database."

From: Moyer, Carol
Sent: Tuesday, February 20, 2018 5:58 PM
To: Hull, Amy <Amy.Hull@nrc.gov>; Tregoning, Robert <Robert.Tregoning@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>
Subject: FW: Draft Agenda for NRC-DOE Informal Information Exchange

Hi Amy and Rob,

Plans are taking shape for a research information exchange with DOE LWRS for the week of the RIC. The original intent was to brief RES/DE management, but of course there are many others likely to be interested.

Please take a look at the attached draft agenda and provide your comments. I would like to send this on to RES management, and our NRR customers for info, by the end of this week.

Thanks,
Carol

Carol Moyer
Sr. Materials Engineer
RES/DE/CMB
carol.moyer@nrc.gov
301-415-2153

From: Hallbert, Bruce P [mailto:bruce.hallbert@inl.gov]
Sent: Tuesday, February 20, 2018 5:34 PM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Subject: [External_Sender] Draft Agenda for NRC-DOE Informal Information Exchange

Carol,

Thanks again for our discussion last week. I shared our discussion with others from the LWRS program and they are looking forward to this meeting. It will be very valuable for us to have this opportunity to meet and exchange with one another and I appreciate your efforts to help bring this about.

As promised, I've drafted an agenda for our meeting. Since we have four hours, this will provide a good opportunity for overview types of presentations from both sides covering a range of topics in the LWRS program and hopefully as well, from NRC's ongoing research topics related to continuing operation of the existing fleet.

Please review the agenda and provide suggestions for speakers and topics from NRC. I've suggested speakers and topics (placeholders at this point) from our program that should give you an idea of what we'd be prepared to present and discuss. If we could have this information either later this week or next week, I'll then circulate it to DOE-HQ and among our LWRS pathway lead team to get final buy-in and inform. Please let me know if you have any questions or suggestions for improvement. Also, I began with an LWRS template, but expected that we would change to an NRC style template once we iterated on the draft agenda since you are hosting.

Best Regards,

Bruce

--
Bruce P. Hallbert, Ph.D.
Director, Light Water Reactor Sustainability Program Technical Integration Office
Idaho National Laboratory
ph: 208.526.9867
cell: [redacted] (b)(6)

Light Water Reactor Sustainability Program: lwrs.inl.gov

Note to requester: Attachment is immediately following.

From: Moyer, Carol
Sent: Thu, 18 May 2017 19:45:13 +0000
To: Iyengar, Raj
Cc: Frankl, Istvan
Subject: RE: Draft Notes for EPRI mtg 6/6
Attachments: Draft Talking Points for Brian Thomas for EPRI_R4.docx

Raj,

Here is an updated draft of the Talking Points file. If you have CIB notes to add, you can paste them into the relevant sections of this, if you like. (I hope this will save you some time.)

Steve – Please review this draft and provide your feedback. I will pass it along to Erick tomorrow, so that he can make it available to Brian.

Carol

From: Iyengar, Raj
Sent: Thursday, May 18, 2017 9:22 AM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Martinez Rodriguez, Erick <Erick.MartinezRodriguez@nrc.gov>
Subject: RE: Draft Notes for EPRI mtg 6/6

Update from the AM meeting (per Office TA):

Talking points at a high-level (only strategy and vision) – Programmatic details could be addressed later through other exchanges.

From: Moyer, Carol
Sent: Thursday, May 18, 2017 9:15 AM
To: Iyengar, Raj <Raj.Iyengar@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Martinez Rodriguez, Erick <Erick.MartinezRodriguez@nrc.gov>
Subject: RE: Draft Notes for EPRI mtg 6/6

OK, thank you, Raj.

From: Iyengar, Raj
Sent: Thursday, May 18, 2017 9:12 AM
To: Moyer, Carol <Carol.Moyer@nrc.gov>
Cc: Frankl, Istvan <Istvan.Frankl@nrc.gov>; Martinez Rodriguez, Erick <Erick.MartinezRodriguez@nrc.gov>
Subject: RE: Draft Notes for EPRI mtg 6/6

Carol,

Draft Talking Points for Brian Thomas for EPRI-NRC Meeting (6/6/2017)

9:30 AM – Long Term Operation (LTO) Beyond 60 Years, Subsequent License Renewal

- The MOU for Long Term Operations Beyond 60 Years extends through Sept., 2021
- NRC appreciates EPRI's active participation in the April Commission briefing
- Biweekly coordination calls (EPRI/NRC/DOE) are successful

Progress and readiness for SLR applications

- As reported at the April 26th Commission briefing, NRC is ready to accept applications.
- Confirmatory research continues, to reduce uncertainty associated with key technical issues.

Public workshop on SLR topics

- At least two workshops are proposed, to include domestic and international participants.
- Fall 2018 – Focused on reactor pressure vessels, vessel internals, and piping
- Spring 2020 – Focused on concrete and electrical cable degradation
- Proposed scope of the workshops:
  - State of knowledge on the technical issues
  - Status of on-going research on materials degradation and aging management
  - New operating experience with implications for LR and SLR

Technical reports on continued adequacy of RG 1.99

- …[CIB input]
- …

Highlights of harvesting workshop

- Workshop well-attended by DOE, EPRI, NRC, US industry, and international participants. Participants discussed the motivation for harvesting, data needs best addressed by harvesting, sources of materials for harvesting and future harvesting program planning.
  - Workshop discussion emphasized the need for a clearly defined objective to justify the level of effort and demonstrate value.
  - Past harvesting experience shows valuable technical information can be gained, but harvesting efforts are expensive and complex.
- Workshop summary report will be shared among meeting participants (target: 6/30/17). Future activities from the workshop include cooperative discussion of prioritized data needs for harvesting and potential development of a sources of materials database.

Research priorities for 2017-2018

- …
- …

10:45 – Advanced Reactor Safety Research

Note to requester: The date in the footer of this page, and the next 2 pages that follow, say "12/15/20" because that is the date the records were uploaded into NRC's redaction software. The original date in the footer was 05/18/17. Reason for why date changed when uploaded into redaction software is unknown.

- …
- …

IAP status

- RES/DSA is supporting IAP-2
  - Strategy 2: Acquire/develop sufficient computer codes and tools to perform non-LWR regulatory reviews
- RES/DE is supporting IAP-2 and IAP-4
  - Strategy 2: Acquire/develop sufficient computer codes and tools to perform non-LWR regulatory reviews, Functional Area – Materials and component integrity
  - Strategy 4: Facilitate industry codes and standards needed to support the non-LWR life cycle (including fuels and materials)
- …

Computational codes for non-LWRs

- RES/DSA staff have been reviewing analysis codes and their applicability to non-LWRs and expect to identify codes for confirmatory calculations in 2017. A Phenomena Identification and Ranking Table (PIRT) project is underway in order to assist in defining the necessary code capabilities and technology gaps.
- RES/DSA staff, and NRO staff have participated in Gateway for Accelerated Innovation in Nuclear (GAIN) workshops on modeling and simulation, and fuel safety as a means to assess computer code requirements for non-LWRs and Accident Tolerant Fuels (ATF)

Advanced manufacturing

- Advanced processes, such as additive manufacturing (3D printing), diffusion bonding, friction-stir welding, electron beam (EB) welding, and powder metallurgy (PM/HIP) have been proposed for use in new reactors.
- Benefits include reduced number of welds/joints, reduced machining waste, reduced time to manufacture, and ability to join metals that are difficult to weld conventionally.
- Some advanced manufacturing processes may introduce uncertainty.
  - Material properties need to be confirmed (e.g., PM/HIP vs. forged flanges).
  - Different inspections (pre-service and in-service) may be needed.
  - Components may be susceptible to flaw types or degradation mechanisms previously unseen in LWRs.

Gen IV materials

- RES/DE (and NRO) staff are participating in ASME B&PV Code committees working on high temperature materials needed for some advanced reactor designs.
  - Alloy 617
  - Graphite
- ASME Code is also seeking to expand the temperature range for use of some materials by supplying confirmed materials property data under a broader range of test conditions.
- NRC is collaborating with DOE-NE to avoid surprises in material selection and the establishment of technical bases for the use of newer materials and processes.

- …

11:15 – xLPR and Leak-Before-Break (LBB) Analyses

- …[CIB input]
- …

Current status of MOU development

- …
- …

2:00 – Digital Instrumentation & Control Collaboration

- …[ICEEB input]
- …

Progress during previous year

- …
- …

Priorities for 2017-2018

- …
- …

Subsequent License Renewal (SLR) Research Activities

Key Messages

- Research is being conducted by the Nuclear Regulatory Commission to confirm safe operation of nuclear power plants as they age particularly beyond the first extended operating period and into subsequent license renewal (SLR).
- Significant progress has been made in addressing the key technical issues pertinent to the aging management of systems, structures and components in nuclear power plants.
- The NRC staff continues to cooperate with the industry, Department of Energy (DOE), and Electric Power Research Institute (EPRI) to leverage research to ensure that aging effects will be adequately managed during the 60 to 80 year operating period.

Facts

- The NRC staff is performing the necessary confirmatory research to support timely and efficient reviews of future SLR applications, including the assessment of reactor structural components that could deteriorate due to material degradation resulting from extended exposure to elevated temperatures, pressures, neutron irradiation, stress, and corrosive media.
- NRC research activities will likely continue for at least 5 years in some of the technical areas, with periodic reviews to consider whether the available information is adequate to support the development of generic aging management guidance.
- Near-term confirmatory research efforts will support staff reviews of initial SLR applications.
- Longer-term confirmatory research will augment the technical basis for updating regulatory guidance in the future, as necessary, and inform staff reviews of future SLR applications.
- NRC research supports the safety basis of ongoing revisions to the aging management programs (AMPs) to ensure the functionality and safety margins of NPP systems, structures, and components (SSCs) by enhancing our understanding of the causes and how to control of degradation mechanisms.
- RES staff is collaborating with EPRI's Long-Term Operations (LTO) program and DOE's Light Water Reactor Sustainability (LWRS) staff on SLR-related research topics (reactor pressure vessel (RPV) embrittlement, irradiation-assisted damage in reactor internals, concrete degradation, and cables qualification and condition assessment).

NRC Readiness for Advanced Reactors (Non-LWRs)

Key Messages

- **The NRC can review and license new non-LWR designs using the existing regulatory framework but is working to improve processes to support effective, efficient and predictable regulatory review activities.**
- **The NRC is planning and proactively implementing activities in three focus areas to prepare for the effective, efficient and predictable review of non-LWR designs: enhancing technical readiness, optimizing regulatory readiness, and optimizing communications.**
- **In the near term (0-5 years), the NRC is focusing on technology-inclusive activities commensurate with the pace of non-LWR technology development and maturity.**

Facts

- Vendors and applicants are responsible for providing sufficient research and documentation to support their safety case, including the identification and resolution of new design issues.
- Challenges have been faced with new vendors due to limited familiarity with the regulatory process and potential vendor budget constraints. The NRC is addressing these challenges through public meetings with the vendors and various industry groups to provide information on the regulatory process and to gain insights into the challenges the vendor community is encountering or anticipating.
- The NRC and DOE have developed plans that describe their respective vision and readiness strategies to support the efficient development, licensing, and deployment of non-LWRs.
    - The NRC's vision and strategy document was issued for public comment in July 2016 and was finalized in December 2016.
    - To execute the NRCs readiness strategy, draft implementation action plans have been developed for the near-term (0-5 years), mid-term (5-10 years) and long-term (>10 years)
- The NRC is enhancing its existing regulatory framework to address non-LWRs in a technology neutral manner, which include:
    - Development of advanced, non-LWR design criteria.
    - Developing a conceptual design review process to give vendors regulatory feedback at an early design phase.
    - Developing a staged review process to allow vendors to get regulatory review at pace with their funding needs.
    - Developing prototype guidance.
- The NRC is working with DOE to implement a process for providing accurate and current information to DOE in support of the Gateway for Accelerated Innovation in Nuclear (GAIN) initiative under and MOU signed on November 10, 2016.
- The NRC is pursuing outreach activities to educate new vendors on the regulatory process. The NRC and DOE initiated the Advanced Non-LWR Workshop series to proactively reach out, educate, and interact with as many vendors and stakeholders as possible. A third workshop was held on April 25 and 26, 2017.

Non-Light Water Reactor (Non-LWR) Regulatory Framework Development

Key Messages

- **The NRC can review and license new non-LWR designs using the existing regulatory framework but is working to improve processes to support timely and efficient licensing activities.**
- **The NRC and its predecessor agency, the Atomic Energy Commission (AEC), have significant historical experience with non-LWR designs.**
- **The NRC is enhancing its existing regulatory framework to address non-LWRs in a technology neutral manner as part of its Vision and Strategy for Safely Achieving Effective and Efficient Non-Light Water Reactor Mission Readiness.**
- **The NRC is collaborating with international counterparts on regulatory approaches to non-LWRs.**

Facts

- The AEC reviewed and licensed designs dating back to the construction and operation of the first experimental breeder reactor in 1951 and the establishment of an experimental reactor program in 1954.
- The NRC has not licensed a commercial non-LWR for construction or operation, however, the NRC did review a variety of conceptual designs, at varying levels of detail, between 1978 (Hanford Fast Flux Test Reactor) and 2010 (pebble bed modular reactor (PBMR) and General Electric-Hitachi (GEH) PRISM).
- More recently, in February 2016, the NRC reviewed and approved a construction permit for a new and innovative medical isotope production facility submitted by SHINE Medical Technologies, Inc. (the "SHINE" facility). This project demonstrated the NRC's ability to review new and innovative facility designs.
- The NRC is enhancing its existing regulatory framework to address non-LWRs in a technology neutral manner as part of its Vision and Strategy for Safely Achieving Effective and Efficient Non-Light Water Reactor Mission Readiness.
- The NRC has begun hosting a series of public meetings with non-LWR stakeholders to gain feedback on various regulatory framework activities. Examples of the regulatory framework activities discussed include:
    - Developing a conceptual design review process to give vendors regulatory feedback at an early design phase.
    - Developing a staged licensing process for innovative designs within the current licensing framework.
    - Developing guidance on prototype licensing and testing.
    - In advance of the October meeting, the NRC's draft "Regulatory Review Roadmap for Non-Light Water Reactors" was released to facilitate stakeholder discussion and feedback at the meeting.
- The staff also actively participates with our international counterparts as chairs of the NEA working group on regulatory approaches to non-LWRs (focusing on sodium-cooled fast reactors) and in the IAEA Gen-IV international forum (GIF) activities.