

IAPWS Working Group Power Cycle Chemistry (PCC)

Minutes of IAPWS PCC WG Meetings

Greenwich, London 01 – 06 Sep 2013

Chairman: Michael Rziha
Members present: See PCC Attachment A

1. Agenda

1.1. Amendments / Adoption of Agenda

There were no amendments to the drafted agenda.

1.2. Week program: split up of PCC for joint workshops and task groups.

M. Rziha summarized the schedule. There will only be a one-day WG meeting. The rest of the week will be dedicated to ICPWS.

2. Appointment of Clerk of Minutes

S. Marais agreed to act as Clerk of Minutes.

3. Approval of Minutes of PCC WG in Boulder, Colorado, USA, 2012

The minutes were approved without any corrections.

4. Progress Reports on PCC Activities 2012 / 2013

4.1. International Collaboration

There have been no new proposals handed in to the chairman of the PCC WG in the last year.

4.2. ICRN

4.2.1. There have been no new proposals handed in to the chairman of the PCC WG in the last year.

4.2.2. ICRN#17 on Amines: J. Bellows finished the draft of this ICRN and sent it to EPRI for their comments. Comments were received. Final draft will be completed by 15 October 2013, after which it will be sent to the PCC group for further comments and then to M. Rziha for approval by EC. M. Rziha will formally request for this ICRN to be extended, as it expires in September 2013.

Action: J. Bellows
M. Rziha

4.2.3. It was agreed that the position paper on filming amines, compiled in October 2012, will be developed as a new ICRN. Stephanie Marais was elected as the task group leader. W. Hater was added as a workgroup member. The task group was asked to prepare a proposal for the development of the ICRN, including a timeline, by this end of this week.

Action: S. Marais

4.2.4. ICRN#25 on Corrosion Mechanism That Are Related To The Presence Of Contaminants In Steam/Water Circuits, Particularly In Boiler-Water: It was agreed in October 2012 that PCC WG would submit the revised draft to EC for approval. This was not done. Task group members were asked to review the ICRN this week, and to send the ICRN to M Rziha so that he can propose it to the EC for approval.

Action: W. Cook
M. Rziha

4.2.5. ICRN#22 Steam Chemistry in Phase Transition Zone: This ICRN is expiring. M. Rziha will contact M. Stastny and A. Rudge to make a decision about the future of this ICRN.

Action: M. Rziha

4.2.6. ICRN #20 on Sensors For Use At Elevated Temperatures: Work is ongoing. Two articles related to this ICRN have been published and two papers will be presented at the 16th ICPWS.

4.2.7. During the development of the Technical Guidance Document (TGD) on Corrosion Product Sampling, an ICRN for corrosion product sampling in cycling plants was identified. This will be added to the priority list for further research. P. McCann was elected as the leader of the task group. Other members will be D. Addison, W. Cook, M. Rziha, and B. Dooley. A proposal will be submitted before the next PCC WG meeting for discussion during the meeting.

Action: P. McCann

4.2.8. ICRN#26 on Behaviour of Aluminium in the Steam Water Cycle of Power Plants: Has been circulated to National Committees for postal ballot in October 2010. M. Rziha, G. Joy, F.U. Leidich: work-out final proposal for approval by the PCC WG.

Action: M. Rziha
G. Joy
F.U. Leidich

4.3. PCC Task Groups

4.4. PCC Technical Guidance Documents (TGD)

4.4.1. B. Dooley reviewed the progress over the last three years. He also highlighted the importance of the IAPWS guidance documents. The existing guidance documents which have been issued so far, all are now in widespread use worldwide.

4.4.2. New TGD's are as follows:

- Steam Purity for Turbine Operation (September 2013). The final draft was accepted by WG and NC's. Official release will be requested at EC meeting.
- Corrosion Product Sampling and Analysis (December 2013). Draft is accepted by WG. Minor editorial comments will be included until mid September. Action: D Addison, Post ballot release will be requested by M Rziha at EC meeting to get official release by end of 2013.

4.4.3. The TGD on Corrosion Product Sampling and Analysis was presented. D Addison gave feedback about the main issues addressed:

- Cycling issues are not addressed in the TGD and will be addressed in a new ICRN, with the goal to produce a separate TGD dealing with this specific operational mode.
- No steam sampling is specified
- For turbulent flow conditions, standard line sizes will be specified instead of the Reynolds number
- All references for the basis of the tables in the TGD must be kept so that the next reviser of the TGD knows what the tables are based on
- Both online monitoring and grab sampling have been included
- Will make reference to widely available T-shaped sample splitter. If more references about Y- shaped sample splitter becomes available, it may be included in the revision of the TGD
- Nuclear plants have not been included in this TGD
- Have included achievable limits for different types of plants and operating regimes
- Have included a table for determination techniques

4.4.4. During the meeting, the following future needs for TGD's were identified:

- Amendment to carryover TGD
- Amines
- Cycling and two-shifting
- Sampling and Instrumentation in nuclear plants

4.4.5. On the third day of the ICPWS, delegates were asked to list future PCC technical guidance document requirements. The list is as follows:

- Consensus guideline for sizing of sampling lines
- How to sample tubes in HRSG's
- Air in-leakage and cycling plants
- Condensate polishers for high temperature plant, such as those with ACC's
- Outage inspection guideline for chemists
- QA/QC
- Understanding effects of organics in make-up plant and cycle and removal techniques

4.5. PCC Public Relations

4.5.1. It was agreed that PCC WG would assist A. Harvey in finding ways of improving the design of the IAPWS website so that it can be picked up by search engines. M. Rziha will explain the context to A. Harvey and explain the need to investigate companies that can assist in optimising the website. J. Bellows will provide inputs to A. Harvey.

Action: M. Rziha
J. Bellows

4.5.2. M. Rziha will prepare an article with the highlights of this meeting for the Power Plant Chemistry magazine.

Action: M. Rziha

4.5.3. P. McCann will prepare the press release.

Action: P. McCann

- 4.5.4. It was recommended that the names or description of all files stored on the website should make reference to the name of the author and the topic so that it can be more easily retrieved. J. Bellows further proposed to recommend a way of indexing the documents to improve search capability.

Action: J. Bellows

4.6. Other Action List Items

There were no other items not covered on the agenda.

5. Priority List Review

- 5.1. The priority list was discussed. It was agreed that items in the priority list that have been developed into ICRN's will be removed from this list and that these will be listed under ICRN's in Section 4.2. M. Rziha will revise the list. The purpose and benefits of the Priority List will be reviewed at the next PCC WG meeting.

Action: M. Rziha

6. Other Business

- 6.1. It was agreed that all documents relevant to the compilation of TGD's will be archived on the IAPWS PCC WG website, with the exception of documents published and readily available in the public domain. This will be password protected. The purpose of archiving this information is to ensure that it is available to future revisers of the TGD. The chairperson of PCC WG will have administrative rights.
- 6.2. W. Cook gave a presentation on Hydrogen Effusion Probe For Corrosion Monitoring. The presentation will be posted on the IAPWS website.

7. Changes in Membership, Election of Officers

- 7.1. The following new members of PCC were proposed and unanimously accepted:

New Member	Proposed by:	Seconded by:
Dr W Hater, BKG Water Solutions, Germany	M. Rziha	B. Dooley
T Ichihara, Power Systems - Mitsubishi Heavy Industries Ltd, Japan	S. Uchida	M. Rziha

- 7.2. M. Rziha will propose acceptance of these additional PCC members by the executive committee.

Action: M. Rziha

- 7.3. M. Rziha will contact all members that have not attended IAPWS meetings in a long time to determine if they are still interested in participating. M Rziha will provide list of above members within IAPWS to P. McCann so that the latter can contact these members.

Action: M. Rziha
P. McCann

7.4. Alain Kleitz passed away this year. He was a great member from France for many years and the IAPWS PCC WG appreciates his contribution over the years.

7.5. All members were asked to confirm their details on the contact list for further communication.

8. Preparation of Action List 2013 / 2014, Task Distribution, Next Year's Agenda

Action: M. Rziha

9. Preparation of PCC WG Report for Executive Meeting

Action: M. Rziha

10. Miscellaneous and Adjournment