International Cadmium Association

168 Avenue de Tervueren/Box 4 • B-1150 Brussels, Belgium
Tel. : + 32(0)2-776 00 77 • Fax : + 32(0)2-777 05 65
Email : ccanooi@cadmium.org

Minutes of the 5th ICdA H&S Committee

June 8th, 2010
SODEHOTEL LA WOLUWE
Best Western Premier
5 Avenue E Mounier Brussels

1- Introduction

1.1. Attendance list

Christian Canoo welcomes the participants. Twenty four people representing Accurec, Boliden, Enersys UK, Floridienne Chimie, Hoppecke, James M. Brown, Nyrstar, Portovesme, Rockwood Pigments, Saft, Snam, Xstrata, 5NPlus and ICdA attend the meeting (cf. file 1.1_ICdA 5thH&S Committee 08.06.2010 Attendance List Updating 10.06.2010[1]]).

1.2. Agenda

The provisional agenda proposed by ICdA is adopted (cf. file 1.2_Provisional Agenda 5th ICdA H&S Ctee vf).

1.3. Approval of the minutes of the 4th H&S committee (October 13th, 2009)

The minutes of the fourth H&S committee (October 13th, 2009) are approved unanimously (cf file 1.3_ICdA 4thH&S Ctee minutes final [1]).

2- Objectives of the meeting: the context of ICdA program, the connection with REACH, the connection with SCOEL *(Patrick de Metz)*

In his presentation (cf. file 2_Objectives of the meeting) Patrick de Metz reminds the objective of the ICdA Health & Safety committee which is to disseminate the ICdA Guidance document to ICdA member companies and their key personnel.
The Cd/CdO risk assessment having initially showed that there were in Europe risks for workers under current management methodologies, the decision was taken, some 3 years ago, to assist ICdA members with the implementation of the ICdA Guidance document “ICdA Guidance on the management of the risk related to chronic occupational exposure to cadmium and its compounds”.

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Patrick de Metz puts the 5th meeting in the general framework:

- After having discussed about
  - Measuring Cd in air
  - Medical supervision
  - Individual and collective hygiene procedures
- The today meeting is about
  - Medical surveillance

Patrick de Metz introduces the points that will be covered in the following presented themes:

- The review of the existing state of play based on the discovery questionnaire
- A discussion on some key points of questionnaire and ancillary points

3- Reminder of the ICdA program: the cornerstone of the risks reduction measures in the CSR part of REACH *(Patrick de Metz)*

Patrick de Metz remembers the direct links existing between the ICdA program and legislative work part of SCOEL, REACH and OEL setting activities in some Member States (cf file 3_Link with other legislative work):

- SCOEL has proposed, 6 months ago, values for OEL and BLV, these indicative values of 4µg/m3 (resp) as OEL and 2µg Cd/g creatinine as BLV, being based non on feasibility but only on science
- REACH registration dossier has to propose risk measurement structures. A health based OEL set at EU level can be retained as the DNL for the REACH dossier
- Several Member States have ongoing OEL setting initiatives. It exists a risk that some Member State decides a transposition on the basis of the indicative values

To the question of Christian Canoo “do we have example that some BLV values are taken as binding in some state” an example is given for France with a binding lead value not coming from EU.

4- Reminder of the medical section of the ICdA program: the decisional diagram CdU-CdB *(Patrick de Metz)*

Patrick de Metz presents the decisional diagram (cf. file 4_The decision diagram of ICdA/Swedish regulation):

- On X Cd-B in µgCd/L
- On Y Cd-U in µgCd/g creatinine

and briefly reminds the logic of the system:

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- Cd-B is representative of recent exposure (more or less past 3 months)
- Cd-U, which has a half-life of about 20 to 30 years, integrates all the past exposure

This diagram defines cut-off levels at 5 and 8 µgCd/L for Cd-B, and 2 and 5 µgCd/g creatinine for Cd-U.
The experience shows that after X years, by implementing the Swedish program, it is possible to reach for all workers Cd-U< 2.

There is a discussion about the fact that even with low OEL values the survey of all workers must be kept: there is always a risk due to accidental exposure (filter incident …) or to improper hygiene.

5- Coffee break

Patrick de Metz, the H&S Committee Chairman, introduces M Maxime Cossette EH&S Manager of 5NPlus who has prepared the questionnaire about Medical Surveillance program and will present the analysis of the responses.

6- Analysis of Medical surveillance program responses *(Maxime Cossette)*

Maxime Cossette presents the questionnaire (cf file 6a_Questionnaire medical surveillance) divided in 3 sections:

- Bio monitoring basics
- Removal and return to work
- Medical Surveillance

He thanks the participants for their feed-back and reminds that the data is kept totally confidential.

16 responses have been received and analysed, and Maxime Cossette underlines that it is rather good considering the short given time frame.
The results of each item are presented and commented:

a. For detailed results see file 6b_Final presentation-medical surveillance program
b. Discussions about some topics

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Everybody measures creatinine corrected Cd-U values.

A doctor explains that it is necessary to make this correction in order to neutralize dilution effect (somebody drinking a lot or at the contrary having too concentrated urines): if you don't correct you may get either false positives or false negatives. It is also necessary to insure that the creatinine value is within a certain bracket.

Regarding the removal from work, mandatory above 5µg Cd-U/g creatinine (confirmed by a second measure) it may be done before reaching this level if a continuous trend from 2 to 3 or from 3 to 4 is noticed.

7- Some key points and open discussion about Medical surveillance program *(Patrick de Metz)*

Patrick de Metz proposes to review the general rules.....

a. two zones / three zones concept

In some countries only 2 zones are used either green or red
A doctor points out that the error, when making a control once a year, is quite big and that by using only 2 zones it is difficult to take the right decision. Particularly the three zones concept has been used in Germany for decades and has been very useful for the doctors.
If Cd-U increases, we want to know it in advance, that is why it is better to use a three zones concept.

b. "ultra green" area

We discuss about the relevance to define "ultra green" areas when the Cd in air is very low, largely under 2µg/m3. Everybody agrees that today the most important parameter to prevent Cd high exposure is not the Cd concentration in air, but the behaviour and the hygiene.
The conclusion is that it would be unwise in a plant using Cd to define "ultra green" areas, it remains always the risk due to improper hygiene or incidental exposure. The bio-monitoring program has to be considered as a safety net.

c. Utilization of Cd-B and Cd-U bio-markers

In some countries only Cd-U is used, Cd-B being not allowed without workers authorization.
To the question "why should we measure Cd-B as the SCOEL document only specifies Cd-U?" :

-Cd-B is not mandatory but it is a good tool for prevention
-Cd-B as no link to kidney issues, but indicates in which direction Cd-U will go

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d. Corrected or un-corrected Cd-U

There is a consensus on the necessity to use creatinine corrected values: urine must not be either too diluted or too concentrated.
Pr Bernard had proposed, in formers papers and meetings, to validate Cd-U/g creatinine measures only within the bracket of [0,3 – 3,0]g creatinine/L: all the medical doctors agree.

e. Frequency of the monitoring

To the question "Is there a medical necessity to measure Cd-U more frequently" the answer is: no, because we also measure Cd-B.
Patrick de Metz points out that in the old 1996 program the frequency of monitoring was increasing when going towards the red direction, but it was difficult to plan. In 2006 we decided to have the frequency of monitoring independent of the level of Cd-U, but to re-test if something seems to be wrong.

In Sweden the frequency of monitoring for Cd-B is at the beginning once every 6 months. If Cd-B remains under 5µCd/L, then the frequency will go to once every 12 months.
When exceeding 8µgCd/L the worker is removed, and will not be allowed to return to his workplace before decreasing under 5.

f. Effect bio-marker

As effect bio-marker one of the 3 proteins α1, β2 or RBP is used.
In France β2 was used in the past but we gradually went to RBP and stopped β2: β2, when facing some changes of pH can lead to false readings.
It is agreed that β2 is the less stable, and that RBP shows a very good stability.

g. Communication of the results

There are different paths depending on the countries.
Commonly the nurse does the communication when in green zone, and the doctor when in orange or red zone.
In some countries the management may have access to the data by agreement or by contract.

h. New employees

All agree that we should have a system in order to insure that people are controlled and fit before working in a Cd exposed workplace.
A questionnaire is generally used by the doctors in order to insure that a worker is fit: people with kidney dysfunction are excluded, some take into consideration the fact of being a heavy smoker.
In some countries a smoking criteria would be considered as discrimination.
The time necessary for receiving the laboratory results goes from one week to three-four weeks.

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In some countries nobody goes to an exposed workplace before getting the results, in others the people can work in between, but are only put definitively in their position after receiving the results.
Some do respiratory testing, but due to also SO2 exposure or a lot of dust (pigments production).
To the question “as newcomers are less conscious of rules, should the frequency of bio-monitoring be higher for them” the answer for some is yes by law, for others yes for new comers or people put in a new position, but some also consider that it is not necessary.

i. Changing of zone

The decisional diagram shows a first clear cut at 5µgCd/L, but we should not have an “engineer approach”: not only is the change of zone important, but also the speed of change.
A doctor points out that if a deviation is noticed during the survey, even for somebody still in the green zone, actions are engaged in order to prevent from going to the orange zone.
The removal from workplace when going to orange zone is not systematic, it may depend of the worker and of his background.
Generally there is a communication to the management, not of the data, but of who is changing from green to orange zone.

When changing from orange to red zone the rules are generally the same, but in addition the management has to be informed in order to remove the worker.

j. Flexibility of the medical surveillance program

Everybody agrees that exposure removal based on Cd-U exceedance gives more flexibility that removal based on Cd-B exceedance.

k. Bio-monitoring after removal

When the removal has been decided after Cd-B exceedance, it makes sense to make an other measure two or three months later; it doesn’t make sense after Cd-U exceedance or in this case before at least one year.

l. Return to work

After Cd-B exceedance the return to work is decided when the worker goes back at the first threshold.
After Cd-U exceedance, and a second test for confirmation, in practice a worker will never go back to an exposed workplace.

m. Temporary workers

Most are using temporary workers on a regular basis.
The same rules as for company employees are generally used for temporary workers.
When leaving, making a bio-monitor picture has more a juridical interest, than a medical interest.

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8- Launch of the second OCdBIO questionnaire *(Patrick de Metz, Christian Canoo)*

Patrick de Metz reminds that a first gathering of OCdBIO (Occupational Cadmium Bio Indicators Observations) based on 2008 data had been done last year. Some suggestions had been done to improve the process, leading to one change: a column has been added specifying the number of workers medically removed from Cd exposure for each Cd-U category (cf. file 8a-_Second_OCdBIO_questionnaire_-2009_data-).

Some items are discussed:

- If Cd-U is not monitored every year, then the last available data (2008 or 2007) should be included, in order to catch the whole population.
- As we have to show outside (for example to national health authorities) what we are doing, the added column specifying the number of workers medically removed from Cd will avoid that some people assume that workers are still exposed with high level of Cd-U.

Christian Canoo presents the questionnaire (Cf file 8b_OCdBIO-2_ICdA_Trustee_Confidential[1]), which will be returned to him, acting as ICdA trustee, the return date being postponed from one week to July 2nd.

9- Information about SCOEL status *(Patrick de Metz, Christian Canoo)*

ICdA had last year discussions with SCOEL where we invoiced 2 arguments:

- For BLV comments based on last Pr Bernard's publication
- For OEL we had some discussion about pre remarks and the fact that there was no discrimination between soluble and non soluble components

There was a meeting of SCOEL in December, but the discussion for Cd was delayed

In March, SCOEL decided to take the Cd issue:

- The Cd case is now closed for the SCOEL, but the minutes are not yet published.
- The paper of Pr Bernard which has now been accepted, will have no impact on the BLV, but we can perhaps expect some nuances for non soluble components.
- The SCOEL will now make his recommendation to the Commission.

10- Gathering of opinions: informations from the participants about local situations, any other business *(All)*

Rolf Rodermund presents (cf file 9_OEL_DE[1]) the development in Germany of Occupational Limit Values for Cadmium.
A new OEL System for Carcinogens has been established last year introducing three risk bands, instead of two risk bands under the old system.

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Two OEL limits have been set, one for “tolerable risk” the second for “acceptable risk”, at respectively 1:250 and 1:2500 (until 2013) of the OEL of 40µg/m3 Cd in air_respirable part, based on the BMD10coming from the 1983_Takenaka study (BMD10 means 10% probability for rats to develop a cancer)

11- Setting of 6th H&S committee and long term planning

Sixth H&S committee:

Tuesday **15th October 2010**
Theme: **Choosing and maintaining the right Personal Protective Equipments (PPE)**

Regarding the long term planning it is agreed to keep H&S Committees on a regular basis of two meetings per year.
The key activities of the H&S Committee are:

- To generate a revision of the ICdA Guidance
- To make afollow up of the new regulation requirements
- To keep alive the OCdBio Observatory

10- Any other business

No special issue has been raised

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