

NICOLE WORKING GROUP REPORT: WG 3, APRIL 1997

NICOLE Workshop " Control Methods (Remediation and Containment)" 17-18 April 1997

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(For further information please contact the author).

1. Welcome and Introduction, by J-M. Lebeault

Professor J.-M. Lebeault welcomed all participants on behalf of the Université de Technologie de Compiègne and particularly on behalf of the Chemical Engineering Department and hoped that everyone will enjoy the meeting in Compiègne.

2. The Aims of NICOLE, Progress Reports of the two Previous Workshops, by M.J Bell

Mr. Bell restates the aims of NICOLE and the results of the two previous workshops.

Based on the results, the first year of NICOLE has been considered successful, all milestones and deliverables have been met, a large number of topics have emerged, identification of research needs is in good way, the Industry Sub-Group is performing well, the workshops have been well organised, well attended, and have given good overviews. There are areas we need to improve:

- identified projects are not taking off fast enough
- organisation based on workshops is not really adequate.

The experience of the two previous workshops led the Steering Group to propose the creation of Topic Groups which will focus on the development of project teams to advance the development of identified issues and to initiate funded projects. He hoped that the meeting in Compiègne will be able to further identify topics which will be discussed in Brighton during the workshop on Measurement and Monitoring.

The Scientific Advisory Group is now working to provide DG XII with NICOLE priorities to be considered for the 5th Framework Programme.

Finally he discussed the relations between NICOLE and CARACAS.

A member of the CARACAS Core Group will have the opportunity to present its programme, collaboration is suggested in risk communication and in the development of rapid low cost techniques for measurement and monitoring.

A NICOLE /NOBIS conference will be held in Amsterdam on 10 October 1997. The conference will present papers on *in situ* bioremediation research that is being carried out in the Dutch

NOBIS programme, the EU Environment programme and the American RTDF programme. The conference is open to all members of NICOLE.

3. Presentations

The aims of the presentations were to explain the state of the art in soil processing, containment methods and in-situ remediation methods. Three presentations were delivered:

1. Innovative Remediation Technologies: a Problem Holder's Perspective, by Ger Beuming from Shell (NL)
2. Containment Approaches: a Consulting Engineer's Perspective, by Steffan Jeffries from Golder Associates (UK)
3. Recent Progress and Limits in Bioremediation Research, by Paul Lecomte from CNRSSP (F).

The first presentation was based on Shell's experiences of the bioremediation of soil contaminated with pesticides. Due sometimes to overestimation or underestimation of the pesticides, and to the style of the speaker the presentation was very similar to a "thriller" where the engineering approach had to adapt it to different situations.

The second presentation, based on containment, was a very good review presented with "humour" and demonstrated very well how containment is active both in its conception and in its function.

The third presentation was a very well documented review on progress but also on limits of bioremediation.

4. Parallel Working Group Sessions

Four working groups discussed different aspects in order to identify research needs-topics. Six topics were identified after the usual NICOLE process of voting by all the participants in the workshop:

1. Comparison of remediation technologies
2. On-line monitoring (*further discussion of this topic was deferred to the next meeting*)
3. Natural attenuation of source contaminants from the perspective of historical sites
4. Beneficial use of contaminated soils
5. Phytoremediation
6. Demonstration sites for novel clean-up technologies

Finally the six topics have been reorganised in:

1- Comparison of Remediation Technologies

"The objective is to develop a strategy/concept and tool for the comparison and optimization of remedial technologies from an integral point of view, taking into account risk reduction, environmental merit and costs as a function of time. This tool should fit into an overall European framework for land management".

Topic leaders : Lida Schwelwald-van der Kley, Port of Rotterdam (NL)

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Joop Okx, Tauw Milieu (NL)

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2- Natural Attenuation of Source Contaminants from the Perspective of Historical Sites

The basis of the topic is to identify what can be learned from past in terms of natural attenuation. The objectives are to identify: what is available in terms of data ? what type of sites can be found ? what measurements need to be taken ? what different disciplines are required and how do they interact ? how can process of change with time can be predicted ? how information will be used ?

Topic leader : Steven Smith, Welsh Development Agency (UK)

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3- Beneficial Applications for Contaminated Soils

The objectives of beneficial re-use of contaminated soils are related to

- save disposal costs
- add value through "product manufacture"
- recovery of resource
- end use "As-Is"

The topic should:

- identify available information on prior applications and uses;
- consider potential expansion of existing demonstrated uses;
- generate data needed to demonstrate risk acceptability of technically demonstrated processes;
- initiate work to establish the typical overall economic and environmental cost/benefit balance.

Topic leader: David Edwards, VHE Holdings PLC (UK)

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4- Demonstration Sites for Novel Clean-up Technologies

The main objectives are to:

- survey national initiatives;

- set up a network of national funded initiatives:
- -set up an analytical approach to follow the different sites;
- -set up proposals for funding (industry and EEC).

Topic leader : Michel Jauzein, IRH (F)

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5- Phytoremediation

The aims of the topic are:

- to establish screening criteria for local plants in respect with
- heavy metal accumulation
- organic contaminant accumulation
- organic contaminant degradation
- to optimise growing conditions.

Topic leader : Spur Andersen, Jordforsk (Norway)

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Participants in the workshop signalled their interest in joining these groups to further their development outside the workshop. Other members of NICOLE are invited to contact the topic leaders if they have any interest in joining the topic group.

Closing of the Meeting, by M.J. Bell

M.J. Bell closed the meeting by thanking the Université de Technologie de Compiègne, and by saying that he is convinced that the new approach in identification of topics will be much more efficient to set up new projects and to see most of us in Brighton.