

BALLAST WATER OPPORTUNITY NEWSLETTER 2011/1

Introduction

Early 2011 saw the BWO project alive and kicking again, with as a highlight our Annual Meeting 2011 in Newcastle, consisting of a general part with ample attention to dissemination, a Steering Group meeting and several special focus workshops. Partner NIOZ has been testing challenges in winter, whilst preparing for the new testing science season. This newsletter gives an overview of activities and findings in the first quarter of this year.

WP 1, The project as a whole

The first quarter of 2011 saw a number of activities. Late January the work-package leaders met in Hamburg. Most of the project appeared to be on track; some work packages showed delays. In order to keep on track and to envisage the future, a proposed mid-term review of the project was warmly welcomed. The proposal will be discussed in more detail over the coming months.

By the end of February, we had our annual conference in an overwhelmingly sunny Newcastle. Excellent care was taken by our host, the University of Newcastle; After the plenary meeting, the three workshops, on Inert Gas systems, Modelling and Harmonisation, were well attended. Two students from the Free University of Amsterdam presented their Master's research project, which investigates the success and fail factors of the NSBWO project. Everybody is kindly requested co-operate by responding to the questionnaire.

The JTS the send a letter to the work package leaders indicating outstanding issues, which issues have to be solved to ensure payment over the respective period. During the telephone conference last April 6th, all issues were taken on board and reported accordingly.

One uncertainty that remains open is the role of IMarEST. Although they are interested in remaining on board, the administrative burden is hard to handle. Meanwhile, part of the tasks that were on IMarEST's plate are taken over by the ProSea Foundation and the Wadden Sea Society or landed on the plate of WP 6 leader. We hope to have a conclusive answer on this matter by mid 2011.

WP 2 Policy

To learn and discuss important issues in environmental risk assessment, the BSH attended the 2nd International Fresenius Conference on Environmental Risk Assessment for Chemicals and Biocides in Frankfurt (Main). The conference focused on the achievements and challenges in hazard, exposure and risk assessment for biocides and specific substances, such as petroleum substances or substances to disinfect ballast water. The BSH presented a paper on “Environmental risk assessment of active substances used in ballast water management systems (BWMS) according to the ballast water management convention”. The established contacts to a variety of participants set the scene for ongoing discussions.

During recent ship-board tests of a ballast-water management system the BSH inspected the Training Ship “Golden Bear” of the California Maritime Academy (CMA) in Valejo. The visit aimed at exchange of experience on sampling procedures testing of BWM Systems, investigating biological components, and whether the “Golden Bear” is suitable to be a land- and ship-based test facility. We exchanged views with the ship’s crew, the team which that developed the sampling system, its manufacturer and biologist from Moss Landing Marine Laboratories. Information on special organism monitoring procedures according to G8 and on the sampling system are being published. BSH concluded that the “Golden Bear” is a suitable test facility for BWM Systems, with excellent interaction between the experts involved. The location has sufficient amounts of organisms and the demanded water quality year-round. Cooperation of different NSBWO partners and the Californian scientists has been initiated through the project.

At the NSBWO Annual Meeting 2011, BSH, BfR and UBA presented an overview of last year’s work. The Inert Gas System Workshop aimed to investigate the testing and certification trajectory of a BWM System using tailored combustion fumes for disinfection should be subject to approved according to G9 (use of active substances) or to the G8 only. An external expert from Rostock University (Dept. Technical Thermodynamics) highlighted the substances present in diesel exhaust gas and their reaction with water. The fumes used in the system were generated by a specific combustion process, so as to prevent the formation of toxic by products. No specific conclusion on what approval procedure could yet be drawn. We thank the University of Newcastle for the excellent hosting.

BSH staff members of different expertise continued to develop the process instructions for BWM Systems approval; the document is expected to be finished by September 2011. To improve the work within WP2 to enable a more effective administration of the BSH sub partners, the structure will be reorganised, within the coming months. Presentations and documents on issues mentioned are uploaded on the NSBWO web site.

WP 3 Science - Testing

Testing in winter at NIOZ



Winter is not exactly the best time for testing ballast water treatment systems, because only low numbers of organisms are present. Nevertheless, it offers a good opportunity to test the performance of BWT systems under harsh conditions and extremely cold water temperatures. In particular those systems using chemicals will face problems, as for many chemicals the half-life time of degradation is delayed at lower temperatures. One of the systems that face such problems of a too high content of residual active substances is that of EVONIK. Their ballast water treatment is based on the use of PERACLEAN Ocean. Laboratory and field observations revealed that at temperatures below 4° C the degradation of H₂O₂ and peroxyacetic acid was much reduced, in particular in fresh water. To solve this problem an automated neutralisation step was developed that was rigorously tested in the NIOZ harbour during the winter period. Results show that the neutralisation process worked perfectly under realistic conditions, when using full scale equipment.

Moreover laboratory experiments showed that bacteria quickly recovered and mineralised the residual product (acetic acid).

Already early in the year we prepared for the tests of an in-line inert gas BWT system. The Type Approval process of this category of BWT systems will be an entirely new challenge, but, if successful, this technology will fill in the gap of suitable BWT systems for whips with an extremely large ballast-water volume.

Alongside a vigorous test protocol has been developed that is specifically designed to test different types of filters. The test protocol will be the blue print of testing a whole range of different filters in the coming year.

=====

WP 4 Science - Sampling

WP4's activities continued with meetings in the U.K., Ukraine and Portugal. New scientific contacts were established on ballast water research and organism detection technologies.

Late February the newly launched FP7 Project VECTORS held its kick-off meeting in Olhao, Portugal. The involvement of the WP4 leader in this project will ensure mutual exchange between BWO and VECTORS. VECTORS will address issues such as ballast water management and related risk assessment. For more information see <http://www.marine-vectors.eu/>. VECTORS will update the coastal alien species lists, generated during the DAISIE project (FP6), which update will contribute to the BWO North Sea Alien Species database.

On-board tests of organism detection technologies and gathering additional information on such technologies continued. A concise summary on compliance control methods in relation to the IMO Ballast Water Exchange Standard (D-1) has been developed.

WP 5 Strategies

On the NORSAS webpage/database.

WMU is working on the new Drupal platform NorSAS (North Sea Alien Species Database) website to identify introduced and potentially invasive species in the North Sea. The website (Phase 2) will be launched in May 2011. As for the first phase, BWO-project partners will be invited through e-mails to comment on design and content before the database is made accessible to the public. The online database currently consist of basic background information on all alien species in the North Sea with a focus on those found in the seven partnering countries UK (England & Scotland), Denmark, Sweden, Germany, Netherlands, Belgium, and Norway. In order not to replicate efforts, the data from the DAISIE website is included in the NorSAS website.

BWO Partner DHI in Denmark is currently working on the hydrodynamic model for the North Sea Region. A three-dimensional hydrodynamic model will cover the North Sea, the Belt Sea and the Baltic Sea in a grid with a resolution of three nautical miles (5556 meters). The model has two open boundaries, one in the English Channel and one between Wick in Scotland and Stavanger in Norway. The model includes atmospheric parameters such as wind, atmospheric pressure, air temperature, net precipitation, and relative humidity. The model also includes freshwater run-off from the main rivers (82 in total) in the model area, and tidal water levels at the open boundaries. The result of the model simulations are 3-D fields of current, pressure, salinity, temperature, density and surface elevation. In addition to those parameters, an oxygen map will be included in the analysis. DHI, in collaboration with WMU, held a seminar with scientists and experts on introduced species at the BWO annual meeting (Newcastle), in order to identify suitable model subjects for the simulation.

An overview paper on the introduced species in the North Sea Region is being prepared for submission to a peer-reviewed scientific journal. The paper discusses impacts on the environment, infrastructures and human health, and advises on management strategies to prevent and mitigate biological invasions. A scientific paper on Ballast Water Risk Assessment for the port of Antwerp is also being drafted.

WP 6 Dissemination

This spring, with stimulating support by the project co-ordination, we finalised the totally overhauled dissemination plan, which is now based on a bottom-up strategy. The bottom-up approach is supported by an Analysis of our Target Groups and a 'Smoelenboek' (Project Actor's List, a questionnaire completed interactively at the Annual Meeting). The Smoelenboek was developed by sub partner the Wadden Sea Society; our new sub partner ProSea was instrumental in initiating the Target group analysis.

The finalised Dissemination Plan, together with the Dissemination Action Plan has been published on the NorthSeaBallast.eu web site (/ Folders / Northsea Ballast Water / WP6 Dissemination / BWO-Dissemination Plan - WP6). The Dissemination Plan is decisive; the Dissemination Action Plan is and remains a living document. The two together will be the guidance for dissemination for all involved in the project. Progress according to the plan will be monitored at the monthly telephone conferences as well as at live Project Group meetings.

The new approach for the dissemination planning was presented at the Project group meeting in Hamburg and at the 2011 Annual Meeting in Newcastle.

In the forerunner to the AC11 we circulated our draft target group analysis to as many target group representatives as we could identify, asking their comment and additions. The drafts then were also circulated for comment at the AC11. The joint target group analysis is Annex to the Dissemination Plan.

The Smoelenboek consists of a list of questions about the person, organisation, involvement in the project and preferred communication channel. At the Annual Meeting we asked attendees to couple with another attendee they did not know, to complete each other's profile. Further profiles have been and will be generated by correspondence. The profiles will be processed and published as a data base that remains open for additional entries

Sub Partner ProSea, developer of the marine awareness model course for maritime professionals, received IMO acceptance of the course as international model (27 January 2011). The course interactively involves future sea farers in the concept of sustainable shipping. As a follow up, ProSea and professional shipping organisations, including sub BWO sub partner the Netherlands Ship-Owner Association, organise two-day training courses on implementing marine environmental awareness in shipping company management.