

Call for Papers

THE PRACTICAL APPLICATION OF SURGE ANALYSIS FOR DESIGN AND OPERATION

*9th International Conference on
Pressure Surges*

Chester, UK
24–26 March 2004

bH^rGroup

SURGE ANALYSIS –

Informing design decisions and dealing with uncertainty

Anticipating and controlling transient response is a critical design activity for ensuring both the safety and integrity of fluid distribution systems and their effective operation.

Whilst important, issues such as pump and pipe sizing are only one aspect of hydraulic design. Predicting transient behaviour, commonly termed surge analysis, is potentially more important and certainly more difficult. It often involves detailed computer modelling attempting to simulate the complex interactions of equipment, pipelines and fluid to normal, fault and emergency events.

Surge analysis is not, as yet, subject to codes of practice and so the design constraints must be based on available knowledge and experience. Currently, there is a lack of consistency in both the definition of these constraints and the software options that need to be deployed to enable the most suitable design decisions to be made.

This will be the 9th conference in the ‘Pressure Surges’ series. Back in the 1970’s, we were in the forefront as transient analysis by computer gradually became a reality. In subsequent years, as simulation techniques developed, these conferences premiered the latest breakthroughs from the most active researchers and analysts. The collection of Pressure Surge Conference proceedings contain most of the seminal works in the field and the list of authors reads like a who’s-who of acknowledged gurus – Brekke, Martin, Thorley, Wiggert and Wylie to name but a few. A number of these trail-blazers will be present at the conference.

Latterly, as the technology has matured, the research papers have inevitably focused on increasingly esoteric niche topics. In considering the agenda for the 9th gathering, therefore, it seems to be time to pause, take stock, and review exactly how the technology and the knowledge developed over the last 30 years has translated into ‘real’ life.

It is clear that the appreciation of transient behaviour, if not the analysis itself, must be, and is being, devolved from academia and specialist consultants to the designers, contractors, equipment suppliers and owners. The issues that this conference must target, therefore, are:

- How do surge analysis results really affect design decisions?
- How are cost and risk balanced in surge alleviation decisions?
- How should consistent design constraints be defined?
- Do real systems behave as our models predict?
- What are the critical parameters needed to ‘get it right’?
- Is transient analysis ever black and white?
- Who takes the risk?

There are solutions accepted in some industries which are ignored in others that have the same problems. This conference must, therefore, embrace the widest possible range of sectors: Water, Oil & Gas, Nuclear, Hydroelectric, Petrochemical, Automotive, Aerospace, Building Services, and the widest possible range of systems: potable water, foul water, storm water, full/partially full flow regimes, firewater, cooling systems, water injection, oil and chemical pipelines, power systems, fuel systems.

In order to ensure that the objectives of the conference are met, keynote speakers are committed and there are already contributions offered from a number of organisations:

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|------------------|-------------------------|--------------------------|
| Atkins Process | Flowmaster | Hydrosim |
| BHR Group | GA Valves | Imerys |
| Black & Veatch | GE Hydro | KBR |
| Daniel Valve Co. | Hamilton Flowservices | Mott Macdonald |
| Delft Hydraulics | Hydraulic Analysis Ltd. | Quantum Engineering Dev. |
| EDF | Hydroplan | Stirling Maynard |
| First Hydro | | |

The keynote speakers include John Banyard, Director of Asset Management at Severn Trent Water Ltd, and Ben Wylie, co-author of the surge analysts bible – ‘Fluid Transients’.

Offers of Papers

The usefulness of any conference to delegates is directly related to the quality of the papers presented. This conference must attract contributions on two levels: practical experiences and research advances. The Technical Committee will treat these contributions separately.

1. Industrial Practice Papers

A primary purpose of the Conference is to foster trans-industry, trans-national and trans-functional dissemination of best practice relating to the design, construction and operation of systems subject to unsteady flow phenomena. The Conference aims to bring together plant owners and operators with designers, consultants, surge analysis software providers and users, equipment suppliers and constructors from a wide range of industries to share their experiences and hence enhance their expertise. We call for Industrial Practice Reports which address issues such as:

- ◆ Good design practice and standards, identification of pressure surge issues and recommendations for surge alleviation and control strategies.
- ◆ “Benchmarking” to justify or test the capabilities of surge control devices or surge analysis software, from both suppliers and users.
- ◆ “Case studies” of surge incidents or innovative systems or applications.
- ◆ Field or laboratory test results which can be used by the community to evaluate software or product performance data.
- ◆ Practical design information (eg for surge alleviation devices) or procedures of direct value to system designers and analysts.
- ◆ Submissions which bring together co-authors from different industries or from different sectors of an industry (eg operators and designers, or suppliers and consultants, or software developers and users) would be particularly appropriate to the aims of the Conference.

Submissions in this category will be reviewed by an authoritative expert in the field. They should avoid direct advertising or unsupported claims, need to provide sufficient data to enable readers to relate them to their own experiences and should not reproduce material easily available in the public domain.

2. Research Papers

Another aim of the Conference is to further technical and scientific progress in unsteady flow analysis and to raise the awareness of industrial practitioners to current “leading edge” developments. We call for Research Papers addressing, for example:

- ◆ Improved simulation of surge relief or control strategies or verification of models.
- ◆ Advanced applications (such as leakage detection).
- ◆ Complex interaction phenomena such as multi-phase or cavitating flows, gas release, fluid-structure interaction or flow-induced vibrations.
- ◆ Fundamental issues in numerical methods or fluid behaviour (such as unsteady friction).
- ◆ Application of new techniques to unsteady flow issues (such as Genetic Algorithms or neural networks).

Submissions of original work in this category will be refereed to normal scientific paper standards with two independent referees drawn from an international panel of recognised authorities in fluid transients.

Authors are invited to submit title and abstract within the scope of the Conference, to reach the Conference Organiser by 2 May 2003. The abstract must be relevant to the scope, and the title should briefly describe the content of the paper. Abstracts may be submitted by email to cpile@bhrgroup.com.

Selection of papers will take account of originality, relevance and likely interest to delegates. Predominantly theoretical papers are normally expected to include experimental or other practical validation. Papers should be of a technical nature and we recommend that authors take an exhibition stand should they wish to support their presentations with commercial material.

Important – Authors Please Note

- Papers must be original, unpublished, and not pending publication elsewhere.
- The author submits each paper on the understanding that if accepted he/she will attend the whole Conference to present the paper. Each presenting author is entitled to 25% discount on the full Conference fee.
- Papers, and presentation at the Conference, must be in English.
- Papers should be no longer than 15 pages. There is no minimum length.
- The title should be appropriate to the scope and should accurately describe the content of the paper.
- Guidelines for the preparation of manuscripts will be supplied by BHR Group. Papers conforming to these guidelines will, subject to final refereeing, be accepted for commercial publication by BHR Group in the Conference Proceedings.
- The copyright of accepted papers must be transferred to the Publisher. Authors who wish to retain copyright must notify the organisers when submitting their abstracts.
- The presenting author will receive one copy of the published proceedings plus 25 off-prints of his/her own paper.

Timetable

Deadline for receipt of abstract

2 May 2003

Deadline for receipt of manuscript

5 September 2003

Technical Committee

| | |
|----------------------|-----------------------------------|
| Dr A Anderson | University of Newcastle Upon Tyne |
| Dr A Boldy | HYDROSIM Consultants Limited |
| Mr P Clark | Black and Veatch |
| Dr S Hunt | Hydraulic Analysis Limited |
| Mr M Hamilton | Hamilton Flowservices Ltd |
| Mrs S Jones | BHR Group Ltd |
| Dr S Murray | Atkins Process – Chairman |
| Professor Alan Vardy | University of Dundee |

Advisory Panel

| | |
|-----------------------|--|
| Dr A Bergant | Litostroj E.I d.o.o, Slovenia |
| Professor A Betamio | IST – Technical University of Lisbon, Portugal |
| Professor E Cabrera | Polytechnic University of Valencia, Spain |
| Dr A Dudlik | Fraunhofer UMSICHT, Germany |
| Professor B Karney | University of Toronto, Canada |
| Professor E Koelle | Unicamp Faculty of Engineering, Brazil |
| Dr F Locher | Bechtel Corporation, USA |
| Mr I Pothof | WL Delft Hydraulics |
| Professor H Ramos | IST – Technical University of Lisbon, Portugal |
| Professor J Swaffield | Heriott Watt University, UK |
| Professor D Wiggert | Michigan State University, USA |

Senior Consultants

| | |
|-------------------------|-----------------------------|
| Professor Sam Martin | Georgia Tech, USA |
| Professor David Thorley | City University UK |
| Professor Ben Wylie | University of Michigan, USA |

About BHR Group

BHR Group is an independent Research and Technology organisation. Our services to industry are based around our core skills in Fluid Engineering and include contract research and development, consultancy, software design and development, product development, conferences, seminars and specialist training.

Venue

The Conference will be held at the Moat House, Chester. Chester began as a Roman settlement called Deva in the 1st Century AD. As the most complete walled city in Britain, the Walls, some Roman, some built as recently as 900 years ago, encircle the city for 2 miles. From the Walls the views are of the medieval streets, a 10th C. Cathedral in which Handel's Messiah was first rehearsed, museums, a Roman amphitheatre, the River Dee, as well as shops, hostelryes and, in the distance, the Welsh mountains. With the conference hotel in the heart of the city, Delegates will find their time spent in Chester rewarding and enjoyable.

Accommodation details will be included in the reservation leaflet available in November 2003.

Duplicate Mailings

It is possible that you may receive more than one copy of this leaflet. We apologise that some of the lists we use cannot be cross-referenced to avoid duplication. We hope that this does not cause you undue inconvenience and would be pleased if you would pass on any extra copies to your colleagues.

Enquiries

For further information, please contact:

Miss Catriona Pile

Conference Organiser

BHR Group Limited

The Fluid Engineering Centre

Cranfield

Bedfordshire MK43 0AJ, UK

Tel: 44 (0)1234 750422

Fax: 44 (0)1234 750074

Email: cpile@bhrgroup.com

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Please use one form for each paper submitted.

Abstracts may also be submitted by email to cpile@bhrgroup.com

TITLE

AUTHOR(S) & AFFILIATION(S)

SYNOPSIS (up to 300 words: please continue on additional paper if necessary; figures/tables may be attached)



Please complete your name and address overleaf

Abstract required by 2 May 2003 ● Manuscript required by 5 September 2003

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Your details

Please complete in block letters ticking appropriate boxes

Prof Dr Mr Mrs Miss Ms

Surname

Forename

Position

Company

Address

Post/Zip Code

Country

Telephone

Fax

Email

- I wish to submit a paper and enclose the title and abstract herewith. If accepted, I agree to attend the whole Conference and present the paper.
- I do not wish to submit a paper but would be interested in attending. Please send me full details as soon as they are available.
- I would be interested in taking exhibition space at the Conference.

Please send me further details of:

- BHR Group technical activities Forthcoming conferences

Return to: BHR Group Limited, The Fluid Engineering Centre
Cranfield, Bedfordshire MK43 0AJ, UK
F.A.O. Miss Catriona Pile
Fax: +44 (0)1234 750074
Email: cpile@bhrgroup.com