

AQUA News



April 1998

IWSA—International Water Services Association: **AISE**—Association Internationale des Services d'Eau

The merger progresses

On Friday 23 January 1998, at the 'Companie Générale des Eaux' offices in the heart of Paris, an historic meeting took place between the International Water Services Association and the International Association on Water Quality.

The Presidents of the two Associations, Mr Nicholas Hood and Mr Thomas Keinath respectively, signed a Memorandum of Understanding which will pave the way to a full merger of the two professional associations.

Further steps will be taken in May in Abidjan, Côte d'Ivoire, and in Vancouver, Canada in June, when the IWSA and IAWQ will each seek a mandate from their Boards to put the merger in place by 1 August 1999.



Nicholas Hood and Thomas Keinath

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As with the IWSA and IAWQ, the new association will be dedicated to improving all the engineering, scientific, technical, economic, legal and institutional aspects of the water industry, concentrating on water quality and water/wastewater services. This will be achieved through a series of conferences and workshops and the exchange of information on products and services. The new association hopes to promote research and good practice within the industry and raise public awareness of industry activities. All of the findings of the new association will be communicated in its relevant publications.





Left to Right: Vincent Bath, Anthony Milburn, Jean-Pierre Tardieu, Norihito Tambo, Nicholas Hood, Thomas Keinath, Piet Odendad, Jerry Gilbert, Michael Slipper, Pierre Giacasso and Lynne Callegari.

The Executive Directors of both Associations have started working on the structure and organisation of the new association and in the initial stages, the principal water supply and wastewater activities will continue separately, as they do now. Activities which are currently weak will be strengthened and new activities will be developed. Subsequently, and where appropriate, they will gradually be brought together under the umbrella of integrated water management services and integrated water quality management. Ultimately, single specialised topic activities related purely to water quality management, water supply or wastewater treatment will be set up and managed by the association.

One voice for the UK water industry

Representatives from all the UK's water and sewerage operators have given the go-ahead to the formation of a new trade association to represent the English, Welsh, Scottish and Northern Irish Industries.

The new association will operate from April this year and will be the first ever UK-wide water trade association. It will be known as Water UK.

Brian Duckworth, the Managing Director of Severn Trent Water and Chairman of the Water Services Association, has been named as the new Association's Chairman; Pamela Taylor, the Chief Executive of the Water Companies Association, has been appointed as the new Chief Executive, and John Cuthbert, the Managing Director of Essex and Suffolk Water, has been named as the new association's Vice Chairman.

The two existing trade associations, the Water Services Association and the Water Companies Association,

will be wound up and their essential work carried on by the new association.

When asked what prompted the decision to set up the association, and why now, the new Chief Executive said that for a long time there had been a feeling amongst key players in the industry that a single association which spoke with a single voice for the UK water industry would make sense. There had been previous talks of a merger, but the real breakthrough came when it was understood that in fact a new association was needed—an association which would be sensitive to the complete range of issues within the water industry, from water metering to increased consumer rights.

Moreover, with new environmental and water legislation emanating from Europe, there is an ever-increasing need to ensure that the UK is represented by one single, strong voice.

Another factor which was taken into consideration was the change in political climate—this now means looking at not only the new attitudes and activities of the new government but also those of environmental consumer groups. Again, a united voice would better represent the views of industry than a fragmented one.

Every water operator who is a member of the new association will have the right to vote on the Council. This will mean that all operators will be fairly represented in the policy making process. The association is particularly looking forward to working in partnership with colleagues in Scotland and Northern Ireland. Scotland in particular will be in an excellent position to draw on the knowledge and experience of water utilities in England and Wales during their new regulatory discussions, and in return they can offer their technical expertise to the association's members and of course provide the association with a stronger voice in Europe.

The new association's aim is to take action on water



issues, both at home and abroad. The first step is for its staff to be the 'eyes and ears' of the association—listening to the views of members and considering them in the context of the current political climate, European legislation, and the agendas of others in the field. Policy options will then be formulated, drawing on the expertise of its members, outside organisations and specialists in the problems at issue. The idea is to get as wide a view as possible so that the policies are not developed in a vacuum, but are instead acceptable and workable for those affected. The policies will then be put before the Council for approval.

In order to extend its influence in Europe, the association will be keeping track of what is at issue in Europe—noting any current developments and ideas being propounded. Having identified the issues and developed the appropriate policies, specialists within the association will advocate and lobby MEPs and any relevant European representatives, urging them to im-

plement the policy at a European level. As a single voice, the association's opinions will carry much more weight.

It is important that both the membership of the new association and the staff are at one in understanding the priorities and issues at stake when making policy. This means being consumer sensitive, considering the environmental perspective, and exploring the knowledge and expertise of external organisations as much as possible. The Chief Executive's role will be to manage the association, supporting and encouraging it to follow through its aims and objectives within a set framework.

With the unanimous backing of the water industry, Water UK is geared for success and its official inauguration in April is now eagerly awaited.

Water industry takes on 'New Deal'

Nine UK companies, including Anglian Water Services Ltd pledged their support to the UK government's new youth unemployment programme known as the 'New Deal' on 4 February 1998.

Dr Clive Morton OBE, Human Resources Director of Anglian Water, explained his reasons for getting involved in the initiative as manifold.

He feels that it is imperative for youngsters to understand the environmental issues of water. Water is not an infinite resource and by working in a water utility he hopes that the younger generation will learn to respect and conserve our water resources.

It will give Anglian Water an opportunity to contribute to the community; by working in conjunction with a number of environmental agencies, environmental issues will become more prevalent in the minds of the young. It also means that in social and economic terms, Anglian Water will be creating real employability and stimulating job creation. In turn, it will benefit from the opportunity to recruit its new workforce from newly skilled individuals.

Dr Morton has forecast the engagement of 70 youngsters from April through to March of next year. The new recruits will have the chance to train in all areas of water supply and sanitation including working at Cambridge Sewage Treatment Works to clean up the River Can.



Pamelor Taylor

Elaine Robertson joins the team

The IWSA is delighted to welcome Miss Elaine Robertson as the new Executive Assistant to our Executive Director, Michael Slipper. Originally from Scotland,



Elaine Robertson

Elaine spent many years working throughout the UK and abroad, as an Area Manager for one of the UK's largest tour operators, before settling in London. Since then, Elaine has established her career with organisations such as Rotolito Lombarda SPA, Coopers & Lybrand and Granada Television, working in a managerial/human resources capacity. Indeed, we at the IWSA Secre-

tariat are convinced that with such a wide experience of dealing with people of all nationalities and various professions, she will be able to cope admirably with you, our members!

Elaine is now keen to improve her rusty Greek and French and is looking forward to meeting and talking to you all during forthcoming IWSA activities.

AWWARF releases this year's requests for Proposals

The American Water Works Association Research Foundation (AWWARF), a non-profit organisation dedicated to advancing the science of water, has announced the selection of new research projects approved for funding in 1998. The Foundation sponsors practical, applied research for the drinking water community.

Requests for Proposals (RFPs) for 1998 are available on the AWWARF website (www.awwarf.com). Proposals submitted in response to RFPs must be postmarked by 4 May for all perchlorate projects, and projects with budgets up to \$250 000 in AWWARF funds. Proposals

seeking £250 000 or more in AWWARF funds must be postmarked by 15 July. All project proposals must include 25% of the total project budget as in-kind or cash contribution.

Below is a list of RFPs for the 1998 projects along with maximum AWWARF funding. Interested parties can obtain RFPs from the AWWARF RFP Desk, 6666 W. Quincy Ave., Denver, CO 80235, USA. Tel.: +1303 347 6117/6211; e-mail: dhyghston@awwarf.com or gpreston@awwarf.com or on the AWWARF's home page.

Protect the drinking water consumer from microbial risk:

- Advancing *Cryptosporidium parvum* Detection Methodologies (RFP 2502). \$350 000;
- Development of a Decision Process for Prioritisation of Emerging Pathogen Research (RFP 2503) \$150 000;
- Synergistic Inactivation of *Cryptosporidium* in Natural Waters (RFP 2504). \$250 000;
- Serosurveys to Determine the Attributes Risk of Viral Infection from Groundwater Sources (RFP 2505). \$200 000.

Protect the drinking water consumer from adverse health effects due to chemicals:

- Disposal of Waste Resulting from Arsenic Removal Processes (RFP 2506) \$200 000;
- National Assessment of MTBE Occurrence in Drinking Water and Associated Taste-and-Odour Issues. (RFP 2507) \$350 000;
- Reaction of Polyelectrolytes with other Water Treatment Chemicals and Subsequent Effects on Water Quality and Operational Efficiencies (RFP 2509) \$250 000;
- National Assessment of Perchlorate Contamination Occurrence (RFP 2508) \$150 000.

The following perchlorate projects will be funded through a congressional earmark:

- Application of Bioreactor Systems to Low-Concentration Perchlorate-contaminated Water. (RFP 2530) \$550 000;
- Treatability of Perchlorate-containing Water by Reverse Osmosis and Nanofiltration (RFP 2531). \$250 000;
- Treatability of Perchlorate in Groundwater using Ion Exchange Technology (RFP 2532) \$250 000;

- Survey the Performance of the California Department of Health Service (Ion Chromatography) Analytical Protocol. (RFP2533). \$75 000;
- Short-Term Perchlorate Laboratory Issues (RFP 2534) \$100 000;
- Removal of Perchlorate and Bromate in Conventional Ozone/Granular Activated Carbon Systems (RFR 2535) \$150 000;
- Investigation of Methods of Perchlorate Destruction in Aqueous Waste Streams. (RFP 2536) \$200 000.
- New Techniques for Precisely Locating Buried Infrastructure (RFP 2524).

Provide science and technology to improve public and customer relations:

- Customer Satisfaction: best practices for a continually improving customer responsive organisation. (RFP 2525) \$250 000;
- Public Involvement Strategies: Phase II—Making it Work. (RFP 2526) \$250 000.

Improve utility management to obtain optimum water quality and systems reliability:

- Feasibility Study to Develop an Artificial Intelligence System for Optimisation of Water Treatment plant Operations. (RFP 2510) \$200 000;
- Filter Maintenance and Operational Guidance Manual (RFP2511) \$300 000;
- Guidance Manual for Coagulant Change-Over (RFP 2512) \$150 000;
- Guidance Manual for Disposal for Chlorinated Water (RFP 2513). \$100 000;
- Improving Membrane Operation by control of particle Fouling (RFP 2414) \$250 000;
- Learning from other Industry Deregulation Experiences: Identify Trends and Opportunities for Water Utilities. (RFP 2515). \$120 000;
- Practical Application of On-line Monitoring (RFP 2516) \$100 000;
- Workforce Planning and Development (RFP 2517). \$200 000;
- Quantifying Public Health Risk Reduction Benefits (RFP 2518) \$225 000.

Ensure access to and wise use of water resources and protection of the environment:

- Design of Early Warning and Predictive Source Water Monitoring Systems (RFP 2527) \$250 000;
- Impacts of Major Point and Non-point Sources on Raw Water Treatability (RFP2528) \$300 000;
- Comparing Basins, Galleries and Shallow Wells for the Recharge of a Deep Aquifer (RFP 1529) \$170 000.

Tailored Collaboration Programme Awards

The Board approved five Tailored Collaboration (TC) projects which were submitted by AWWARF utility subscribers. Four of the projects are sole source awards and one is an RFP project (see above). In addition, another window of opportunity for Tailored Collaboration proposal submittals for June 1998 funding was approved. Proposals will be due 1 May 1998. Guidelines for the TC programme are available on the AWWARF website or from Elizabeth Kawczynski, Collaborative Research Manager, Tel.: +1 303 347 6106.

Tailored Collaboration project titles, submitting AWWARF subscriber, and award amounts follow:

Improve utility infrastructure for the reliable delivery of high quality water to the customer's tap:

- Decision Support System for Distribution System Piping Replacement and Rehabilitation (RFP 2519) \$200 000;
- Development of Capital Planning Strategy Manual (RFP 2520) \$250 000;
- Feasibility of Fast Response Testing of Coliform Bacteria in the Distribution System (RFP 2521) \$75 000;
- Guidance Manual for Monitoring Distribution System Quality (RFP 2522). \$350 000;
- Influence of Distribution System Infrastructure on Bacterial Regrowth. (RFP 2523) \$320 000;
- **Improvement of the Ozonation Process through the Use of Static Mixers.** Compagnie Générale des Eaux. AWWARF \$200 000; matching funding \$483 000;
- **Investigation of Criteria for Groundwater under Direct Influence.** Miami-Dade Water and Sewer Department. AWWARF \$200 000; matching funding \$434 000;
- **Aquifer Storage Recovery of Drinking Water from the Cambrian–Ordovician Aquifer in Wisconsin.** Oak Creek Water and Sewer Authority, Wisconsin. AWWARF \$189 144; matching funding \$548 284;
- **Demonstration/Evaluation of the Potential of Public Involvement in Preventing Future Invasive**

Alien Plant Problems in the East Maui Watershed, Island of Maui, Hawaii Board of Water Supply, County of Maui. Maui County Board of Water Supply. AWWARF \$22 000; matching funding \$42 000.

New Editor of *AQUA*

Victoria Paredes, formerly News Editor and Liaison Officer for *AQUA*, has been appointed Editor of the Journal.

Since joining IWSA over a year and a half ago, Victoria has been working hard to improve on both the style and content of *AQUA*. In particular, the news section has been 'jazzed up' to appeal more to our members and subscribers and hence provide better value for money. Indeed the IWSA is pleased to reward Victoria's achievements with this promotion.



Victoria Paredes

Mr Michael Slipper, the previous Editor of *AQUA*, will now be known as the Editor-in-Chief, and Prof. Dr Rolf Gimbel will remain as Scientific and Technical Editor.

New IWSA Members

The IWSA is delighted to welcome aboard our newest members as follows:

Mr Jarmo Hukka, Finland

Mr Hukka is a civil engineer and has worked on water supply/sanitation and development aid projects in various, Kenya, Sri Lanka, the Cayman Islands and developing economies. He is currently finalising his doctoral thesis on institutions and organisations from the viability perspective of water services. He can be contacted at the Turku School of Economics and Business Administration, Finland Future Academy (FTA), PO Box 110 (Tykistökatu 4), FIN-20521 Turku, Finland. Tel.: +358 2 3383 527; fax: +358 2 2330 755; e-mail: jarmo.hukka@tukkk.fi

Maneesh Jhawar, India

Mr Jhawar is a mechanical engineer working for one of the largest pipeline contracting firms in central India. He is particularly interested in collaborating on and/or setting up a joint venture for the manufacture of prestressed cylindrical concrete pipes, which have not yet been introduced in India. In addition, he would like to establish contact with companies planning to take up water supply projects in India.

Rupesh Vasani, India

Specialised in water resources engineering, Mr Vasani works for the Nirma Institute of Technology as a lecturer in the Civil Engineering Department. He lectures on sanitation, irrigation and the environment. Mr Vasani is also a member of the Indian Water Works Association and can be contacted at 39 Styakam Society, New Nehru Nagar Cross Road, S. M. Road, Ambawadi, Ahmedabab 380015, Gujarat, India.

Ellis Koch, USA

Mr Koch has worked in water resources for the last 31 years. Initially with the US Geological Survey and an environmental control agency, he has been responsible for developing the groundwater side of the market for ARCADES Geraghty and Miller. More specifically, he is involved in groundwater development planning, water quality and water management issues, and is interested in applying what he has learned in the USA to supply projects in developing economies.

InterCommunal Association for Dewatering and Purification (AIDE), Belgium

AIDE is an association of public bodies (in the Province of Liège). It was created in 1928 to save the valley of the river 'La Meuse' from floods which were caused by coal mining activities. AIDE has been charged with the design, construction and operation of a special sewerage system known as 'de-watering' to resolve the problem. Other work of the association includes project design, construction management and the maintenance of water works. The association can be contacted at AIDE, rue de la Digue 25, 4420 Saint-Nicholas, Belgium.

Società Italiana per il Gas (Italgas), Italy

The Italgas Group has significant interests in the Italian water industry and is responsible, via a number of subsidiary companies, for drinking water distribution

plants in 304 municipalities serving 2280 000 inhabitants, and waste water treatment plants in 62 municipalities serving 338 000 inhabitants. As its name would suggest, the Group is also responsible for the distribution of gas. Its headquarters are based in Turin and it is currently operating a number of concessionary contracts. The Group is considered to be one of the leading Italian water distribution companies. It can be contacted at Società Italiana per il Gas, L.go R. Parco 11, 10152, Turin, Italy. Tel.: +39 11 239 4571; fax: +39 11 239 5072; e-mail: itgtec@alpcom.it

Feature article

Talking intelligibly about the unimaginable—risk assessment

BY ALEX KIRBY*

As a born-again pessimist, I am a convinced believer in Sod's Law, and in the certainty that if something is capable of going wrong, then it inevitably will. Better still, its operator's precautions and vigilance will guarantee that it will behave impeccably so long as anyone thinks there's the remotest chance of it misbehaving. It always knows how to time the moment of total let-down to ensure the greatest inconvenience and embarrassment to all concerned. So I start from the assumption that things will go wrong.

We obviously try to guard against things going wrong, to the extent of taking sometimes elaborate and expensive precautions against any foreseeable contingency. The trouble is that it's so often the unforeseen—and unforeseeable—disaster that strikes. When it does, hindsight is instantly at hand to persuade us that we should have seen it all coming. But *before* the event, it's hard to think that there's any reason to put in place safeguards against ships leaving harbour with their bow doors open, or against feeding herbivores on the re-

mains of their deceased relatives, or against the night shift in a nuclear power station deciding to see just what does happen if you switch off the cooling system (or against hapless tanker drivers unloading their vehicles into entirely the wrong place). But remember: just because we can't imagine it, that doesn't mean it cannot happen. In fact, the less imaginable something is, the more likely it is that—sooner or later—it *will* happen.

You are professionals, and you go to great lengths to make sure that you work to the highest possible standards. Despite that, I think it's a safe bet that some of you, very probably through no fault of your own, will be involved in the next few years in an episode of some description which is *perceived* as posing a definite risk to members of the public. I say 'perceived' quite deliberately, to cover two sorts of episode: those where there is a real risk, and those where none exists but where one is widely thought to exist. This morning, I think we can treat both sorts as essentially the same: in other words, if people believe themselves *rightly or wrongly* to be in jeopardy, your response will need to be much the same: give people all the information you would be asking for if you were in their shoes.

Most of us are not very rational when it comes to assessing risk. We know, for example, that a trans-Atlantic flight is statistically far less risky than driving down the M4 from central London to Heathrow. But although we know it, we don't modify our behaviour to take account of it. We know that smoking will probably shorten our lives, perhaps very painfully. But with many of us *that* doesn't modify our behaviour either. And perhaps this shows that a small threat, or a remote one, can worry us much more than a substantial one, simply because we use not just our reason when judging risk, but also our imagination. A sort of 'what if' factor comes into play, over-riding the rational parts of our minds, and persuading us that *although* the chances of X happening to us are really pretty small, the consequences if it actually did happen would be appalling (and in that part of the reckoning we may well be correct).

Perhaps mad cow disease is a helpful illustration, even though nobody yet knows whether we may see cases of the human equivalent, CJD, rising to epidemic proportions. Most scientists would at any rate agree that any risk from eating beef is now very small indeed, and that the period of maximum potential risk—if there ever had been any—would have been towards the end of the 1980s, before the suspect parts of cattle were

*Alex Kirby, BBC Religious Affairs Correspondent, presented at the Institution of Water Officers Annual Conference, April 1997 in Chester.

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excluded from the human food chain. Despite all that, many people still regard beef with very great suspicion. They are almost certainly wrong to think that the beef they can buy today will harm them at all. But they are undoubtedly right to think that dying from CJD is a horrible way to go.

There was a report last year that the Department of Health in the UK was planning to develop a rating system for certain risks (they were originally to be associated with new drugs and with some medical procedures, but were broadened to include other categories as well). It looked like this:

RISK	ODDS ON DYING	LINKED TO
High	<1 in 100 p.a.	Certain hereditary diseases
Moderate	1 in 100–1000	Steady smoking
Low	1 in 1000–10 000	Road travel
Very Low	1 in 10 000–100 000	Rail & air travel
Negligible	>1 in a million	Lightning strike, catching CJD by eating beef (and winning the lottery!)

The Department's approach is undoubtedly highly rational, and also largely divorced from the way most of us evaluate risk and chance in real life. I rest my case.

What will all this mean for you when the unimaginable does happen? One of the first things most of us want to know at a time like that is what danger we're in. And close behind that we want to know what we—or better still, you—can do about it. If you do know the answers, tell us in the sort of language we will understand—and that means making it simple enough to penetrate our irrational appraisal of risk. Tell us the odds in absolute terms, and in relative ones as well: that way you'll probably double the numbers of us who understand what you're getting at. If you don't know the answers, then tell us *that*. But *don't* try to persuade us that you know them if you don't, and don't try to tell us that the risk is smaller than you think it may actually turn out to be. Most of us find ignorance relatively easy to forgive—easier, certainly, than blatant attempts to hoodwink us.

But I'm not seriously suggesting that any of you *would* seek deliberately to mislead anyone in the event of disaster. Problems in communicating risk usually arise, not because of deliberate ill-will, but because of genuine and understandable failures to realise how to communicate effectively. I'm going to suggest several guidelines which, if you haven't thought of them already (and you probably did, long ago) may help to make it

easier to persuade people, in the midst of a crisis, that you are giving them the plain and unembroidered facts.

I said earlier that what you need to do at times like that is really to give us all the information you would want to have if you, like us, were on the outside looking in. Communicating risk is partly about *what* you communicate, but at least as importantly it's about *how* you communicate. And in this context, as in almost every other that I can think of, the best way of communicating will always be the simplest.

So, **keep it simple**. Simplicity doesn't mean talking down to people, but talking their language. Some of my best friends are scientists...but I've known many a good scientist with a fascinating story to tell, who's found it very hard to do so because of an inability to escape the strait-jacket of scientific language. Scientists are not alone in this respect, and most professions (and even trades such as journalism) are not exempt. Put yourself in the shoes of the person you are trying to reach, and ask yourself what your words will mean to him or her, *not* what they'll mean to your own colleagues.

Keep it brief. A very effective way of giving no information is to give too much. To all appearances, you're communicating very effectively—but if you give your audience far more detail and context than they can cope with, you stand a good chance of being able to bore them rigid before you need to tell them anything that really matters. If you want a demonstration of the finer points of the technique, listen to a number of politicians when they're interviewed on the radio. They start by answering the question they'd like to have been asked rather than the one they *were* asked, and from there they go on to silence the interviewer and antagonise the listeners by delivering a speech, instead of taking part in a discussion. It's easy to do, if you want to do it—but it won't win you many friends.

Keep it accurate. Tell people what you know and what you don't know, and keep the two entirely separate. Don't claim knowledge you don't have, or certainty that over time becomes less certain: it can be embarrassing to have to issue corrections of over ambitious assertions, and it is a sure-fire way of losing public confidence. The Government would probably have been able to weather the mad cow storm more easily after the March 1996 identification of new variant CJD with the eating of beef if it had not said so often and so confidently in the preceding years that British beef was safe beyond question. And Eurotunnel might have found it

easier to restore confidence in the Channel Tunnel if it had revealed the extent of the fire damage immediately, instead of allowing it to trickle out by degrees. If it didn't know how bad the damage was at the beginning, it should have said so, or at the very least have based what it said on an assumption of the worst possible case. You're much more likely to recover people's trust if you have to tell them that things aren't as bad as you'd been saying than if you have to say they're worse than you'd thought.

Keep it complete. Most of us are now familiar with the tactic of being economical with the truth, of people who avoid telling outright lies but still create a misleading impression by revealing less than their listeners need to know if they're to understand the situation. It can be a tempting trick to try to pull because, by definition, it's unlikely that many people will realise you're keeping anything back. But a variant of Sod's Law dictates that facts have an unpleasant habit of surfacing at the time that's least convenient for the person who wanted to suppress them in the first place. You need to be quite sure that what you're keeping to yourself won't sooner or later blow up in your face.

Keep your own team fully informed. Make sure that everybody involved in the communication of risk knows what is happening and tells the same story. Time and again, public confusion and apprehension is heightened by conflicting versions of the same incident coming from different people within the same company or agency. If your internal communications could let this happen, then they need to be overhauled, so that *everybody* giving out information will be relying on the same source, and so that two enquirers will hear only one version of what's going on.

Keep the possible remedies under review. Whatever disaster you're trying to cope with, there will probably be several possible ways for people to get through it. If it's a question of polluted drinking water, for example, there will probably be the option of bringing in supplies from elsewhere, or perhaps of boiling or otherwise treating the water before it's used. If resources are threatened, again there will be several possible ways through, including alternative supplies and limiting demand. Whatever the crisis, and however many possible answers there may be, it's essential to tell people about them all if they are to be able to make an informed judgement of the risks and of their implications.

Keep the journalists with you. If you make life difficult for us, remember that we can make it just as diffi-

cult for you. If you decide only to give us only incomplete and censored 'news', at times and on terms which suit you, don't be surprised if we work out alternative ways of getting the story—and remember how many stories of corporate bungling, negligence or outright wrongdoing have begun with disgruntled or worried members of the company's own staff, or with local residents. We need authoritative and believable speakers at times to suit our deadlines, not yours (and ours are increasingly spread throughout the whole 24 hours). We need briefings to explain to us exactly what happened, and how, and what you're doing to put it right—and at least a few of us now have enough knowledge of our own to have a fairly good idea if you are trying to deceive us. You may well have had experiences with some journalists which you don't wish ever to repeat, and some of us certainly act indefensibly at times. However, virtually all the specialist environment correspondents are not only informed but also principled, and that taking them into your confidence from the start of an incident is the best way to make sure that you get the best coverage you can hope for. It won't automatically be an uncritical press (or broadcast coverage) that results. But it will be better than anything you could hope for from keeping us at arm's length.

In making a bold claim that you should treat us as responsible adults, I'm not making any plea for special treatment for journalists. We are, in fact, in the eyes of the law not special at all. We have no special rights or privileges, no guarantee of access to places from which ordinary people are excluded—because journalists are at least as ordinary as anybody else, and we make a dreadful mistake if we imagine we're not. People often do go out of their way to help us, but when we are doing our job we rely totally on the goodwill of those we meet. The reason why I argue that you should be completely frank and open with the press is precisely because we are very ordinary members of the public, and I believe that when it comes to communicating risk you owe that same transparent honesty to everyone: giving people the information you would be demanding if you were in their shoes, remember?

And that's what the whole business of communicating risk comes down to in the end: treating people as adults, telling them all you know that will help them to make an informed choice between the available possibilities, none of which may be very appealing. We still suffer in Britain from an official approach which too often believes (not necessarily consciously, but it be-

believes it all the same) that the less you tell people the better; that the official right to silence always overrides the public right to know; that people need to be *protected* from too much reality, for fear that they will be overwhelmed by it.

That's the sort of argument you'd expect of a nanny state, not of one that's confident of its citizens' ability to make mature decisions. Sometimes the decisions the facts lead us to will be difficult ones. But most people prefer to be treated as adult enough to face facts, and respond better when they have an idea of what they're up against than when they're kept in the dark. Harry Evans, when he was editor of the *Sunday Times*, once said (he was talking about immigration and race relations—it was some time in the late sixties): 'We shall do our job, not by telling less of the truth but by telling more of it.' I've never sought to tell people the truth: that's something they have to work out for themselves. But I certainly think we all have to try to tell people as many of the facts as we can, so that they can construct their own truth. Risks are facts: but what sort of truth they add up to each one of us must work out for ourselves.

Feature article

UKWIR—demonstrating success in collaborative research

BY PHILIP BURGESS*

From drinking water and health to sewage sludge disposal, UKWIR's research programme is keeping the UK water industry at the forefront of new developments. This month the UKWIR will begin its fifth year of programme operation.

UK Water Industry Research Limited (UKWIR) was set up by the UK Water Industry in 1993 to provide a framework in which to develop a common research programme for UK water operators on 'one voice' issues. This framework has given the water industry the opportunity to collaborate for the benefit of the whole by obtaining or defending a competitive position on topics that require the industry to have a single voice. By understanding the motivation for research and development, UKWIR's mission is also to promote controlled collaborative research with the industry's regulators and others in order to avoid the wasteful repetition or reinvention of work already in progress.

UKWIR's remit covers drinking water and health issues, water resources, climate change, wastewater treatment, sewage sludge, water mains, services and sewerage, leakage and metering and process control. The programme also includes work on the coordination of water industry standards and environmental issues, both in the UK and Europe. Being entirely representative of the UK water industry, UKWIR harnesses skills and expertise throughout the water sector, rather than trying to fulfil all the industry's needs internally. To date, some 140 research projects have been completed and reported by UKWIR. A further 80 projects are ongoing in the current 1997/98 programme year.

UKWIR therefore represents an effective vehicle, and a catalyst for water organisations to get the best value for research money by working together. Collaborative research through UKWIR also has the advantage of presenting the industry view, as confirmed by scientific research undertaken by academics and people who are independent of the business such as contractors, researcher and consultants. By representing the whole of the UK industry, UKWIR benefits from a stronger and louder voice when campaigning in Europe.

UKWIR's objectives can therefore be summarised as:

- to procure new research in accordance with the industry's strategic business needs;
- to work with industry regulators; and
- to provide value for money for its contributors.

The procurement mechanism

UKWIR's success to date has been based on a clear understanding of client needs and the focus to deliver and disseminate results on behalf of the client. The client is the UK Water industry, as represented by the following sponsors:

- the ten Water Service Companies in England and Wales;
- the Water Companies' Association;*



*Philip Burgess is the Research Programme Administrator for the UK Water Industry Research Ltd, 1 Queen Anne's Gate, London SW1H 9BT, UK. Tel.: +44 (0)171 957 4572; fax: +44 (0)171 222 4559; e-mail: UKWIR@compuserve.com



- the three Scottish Water Authorities;
- Department of Environment (Northern Ireland) Water Service.

Each year the industry puts forward proposals for the UKWIR's programme, based upon criteria for meeting the industry's strategic business needs. Proposals are formulated by the industry's three main committees which consist of representatives from the companies and authorities who are members of UKWIR:

- Environment and Quality;
- Engineering and Operations;
- Economic Regulation.

These committees are UKWIR's 'Client Committees' and are responsible both for defining strategic business needs in the technical and regulatory areas of the industry, identifying opportunities, threats, strengths and weaknesses, as well as the relevant cost implications pertinent to the industry. A number of specialist technical groups and individual task groups support the client committees.

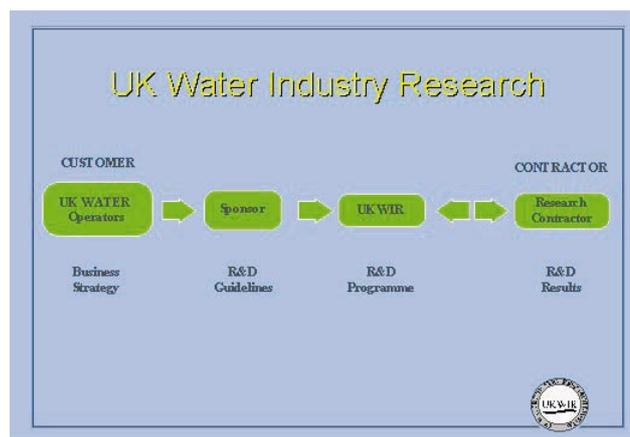
Current priority business needs are: AMP3 and AMP4; building trust with customers; influencing European legislation; and being aware of new scientific concerns so that the industry is at the forefront of knowledge.

Client Managers, drawn from the Client Committees, then determine the research needs of identified business needs in discussion with relevant project managers drawn from the industry's R&D Managers Group and coordinated by UKWIR. Technology Transfer workshops, bringing together appropriate expertise from within the industry and, when appropriate, from outside the industry including the regulators, are used to assist in the identification of research needs. Each proposal put forward is then ranked by the relevant Client Committee in accordance with an agreed methodology.

The preparation of project specifications, together with preliminary costings, is undertaken by the project managers. The specifications are then agreed with the

Client Manager concerned.

The proposed research programme, with its associated budgets and rankings, is agreed by Client Managers meeting jointly with the R&D Managers Group in September each year. The programme is then sent forward for approval by the UKWIR Board in October, after which the project managers procure the agreed work.



Individual projects are managed by project managers drawn from among the industry's R&D Managers' Group, and are centrally coordinated by the UKWIR. It is the responsibility of project managers to procure the work in accordance with agreed procedures. The majority of the work contained in the UKWIR programme is put out to open tender, with tenders being sought from a wide range of contractors, including research organisations, academic institutions, consultancies and others, both in the UK and overseas.

Following the appointment of contractors and the letting of contracts, project managers assist the project steering groups to ensure that key targets for the research work are met, including the preparation and distribution of final research reports which are published by UKWIR. This separation of client and contractor ensures that the research work remains objective, while dynamic management keeps the projects on track and on time.

Project formulation takes some 8 months from beginning to end. The central coordination role of UKWIR is vital in order to achieve this as it is to overseeing the operational aspects of the existing programme, formulated during the previous year and which runs in parallel.

*At the time of writing, a new water industry trade association is being formed; one which will be totally representative of the UK by bringing together the ten water service companies in England and Wales, the Water Companies Association, the three Scottish Water Authorities and the Department of Environment (Northern Ireland) Water Service. In this event, the UKWIR will have one larger sponsor, although the processes of programme formulation and operation are unlikely to be significantly changed.

Further details on UKWIR and its research programme can be obtained from Philip Burgess, at UKWIR: Tel.: 0171 957 4572, fax: 0171 957 4559, or e-mail: UKWIR@compuserve.com

events

10–12 April 1998 (date change), Chandigarh, Punjab, India.

30th Annual Convention of the Indian Water Works Association

Further information: Administrative Manager of IWWA, Pipeline Road, Vakola, Santacruz (east), Mumbai 400 055, India. Tel.: +91 22 6140926; fax: +91 22 649 0691.

21–23 April 1998, Marseille, France

HYDROTOP International Conference on water Management Services and Technologies

Further information/Renseignements complémentaires: HYDROTOP, 314 avenue du Prado, 13008 Marseille, France, Tel.: +33 (0) 4 91 22 72 72; fax: +33 (0)4 91 22 71 71.

26–28 April 1998, Philadelphia, USA

AWWA/IWSA Workshop on Water Quality in the Distribution System: What is the Role of Disinfection Residuals?

Further information: Rick Merrill, AWWA, Tel.: +1 303 347 6185; e-mail: rmerril@awwa.org

10–13 May 1998, Washington DC, USA

NSF/PAHO/WHO 1st International Symposium: Technology, Operations and Economics of Providing Safe Drinking Water in Small Systems.

Further information: Joseph Cotruvo, Director NSF International/WHO Collaborating Center for Drinking Water Safety and Treatment, 1301 K Street NW, Suite 225, Washington, DC 20005 USA. Tel.: +1 (202) 2896 2140; fax: +1(202) 289 2149; e-mail: cotruvo@nsf.org

25–28 May, 1998, Kristiansund, Norway

The 1st Nordic Conference on Water Supply

Further information: Åsre Fjellby, Norwegian Society of Chartered Engineers, Postbox 2312, Solli, N-0201 Oslo, Norway. Tel.: +47 22 94 75 00; fax: +47 22 94 75 02; e-mail åse.fjellby@nif.no



ECWATECH 98: Third International Congress on 'Water: Ecology and Technology'

Further information: P.O. Box 173, Moscow, 107078 Russia. Tel./fax: +7 (095) 207 63 60/207 64 75/957 48 08; e-mail: ecwatech@sibico.msk.ru



IWSA International Conference on Renovating Water Supply Systems

Further information: Palmira De Sousa, Secretariado da Comissão Organizadora em Lisboa, a/c IPE-Águas de Portugal, Av da Liberdade, 114–134, 5º, 1250 Lisboa, Portugal. Tel.: +351 1 3223 07 40; fax: +351 1 347 26 43; or: Sofia Cassam, Secretariado da Comissão Organizadora em Maputo, a/c Empresa Água de Maputo, Av. Eduardo Mondlane 1352, CP2925, Maputo Mozambique. Tel.: +258 1 427 541; fax: +258 1 424 675.

26–28 May 1998, Moscow, Russia

Regional Conference on Ozone Generation and Application to Water and Waste Water Treatment

Further information: SIBICO International JSC, PO Box 173, 107 078 Moscow, Russia. Tel.: +7 095 975 5104; fax: +7 095 207 6310; e-mail: ecwatech@sibico.msk.ru



IWSA Conference on Master Plans for Water Utilities

Further information; Mr Lubmómír Macek, Faculty of civil engineering, CTU Thákurova 7, CZ199 29 Praha 6, Czech Republic. Tel.: +42 2 2435 4608/4607; fax: +42 2 243 4607/10735; e-mail: Macek@fsv.cvut.cz

10–13 August 1998, Stockholm, Sweden

8th Stockholm Water Symposium on 'WATER: the key to socio-economic development and quality of life'

Further information: Stockholm Water Symposium, SE-10636 Stockholm, Sweden. Fax: +46 8 736; e-mail: sympos@siwi.org

16–18 September 1998, Como, Italy

HYDROSOFT 98—7th International Conference on Hydraulic Engineering Software

Further information: Conference Secretariat, HYDROSOFT 98, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK. Tel.: +44 (0)1703 293223; fax: +44 (0)1703 292853; e-mail: liz@wessex.ac.uk

21–24 September 1998, Amsterdam, The Netherlands

AQUATECH 98: International conference on membranes in drinking water and industrial water production

Further information: Prof. Dr ir. J. C. Schippers, IWSA, KIWA



events ■

NV, PO Box 1072, 3430 BB Nieuwegein, the Netherlands. Tel.: +31 30 6069 532; fax: +31 30 6061 165; e-mail: jschippe@kiwaa.nl or: Prof. M. Balaban, European Desalination Society, International Science Services, Abruzzo Science and Technology park, Science and Industry Center, Via Antica arischia 1, L'Aquila 67100, Italy. Tel./fax: +39 862 311 411; e-mail: psta004@in.sgol

23–24 September 1998, Amsterdam, the Netherlands
Trends in On-line Monitoring and Control of Water Supply—The point of view of manufacturers and suppliers (in conjunction with Aquatech '98)

Further information: ir. Egbert Roosma, N.V. PWN Waterleidingbedrijf Noord-Holland, PO Box 5, 2060 BA Bloemendaal, the Netherlands. Tel.: +31 23 5413727; fax: +31 23 5413716.

28–30 September 1998, Mülheim, Germany
Specialised Conference on drinking water distribution with or without disinfectant

Further information: Prof. Rolf Gimbel, IWW, Moritzstrasse 26, Mülheim an der Ruhr, Germany. Tel.: +49 208 4030 3300; e-mail: iww@uni-duisburg.de

7–9 October 1998, Klaipeda, Lithuania
International Conference on the Development of Deep Aquifers and Problems in Drinking Water Treatment

Further information: International Conference Organising Committee, Justiniskiu g. 16, 2056 Vilnius, Lithuania



15–18 November 1998, Tokyo, Japan
International Workshop on Anti Seismic Measures on Water Supply

Further information: Japan Water Works Association, Tokyo Minami Shinjuku Building, 7–8, 2-chome Yoyogi, Shibuya-ku, Tokyo 151, Japan. Tel.: +81 3 (3379) 7642; fax: +81 3 (3379) 8630.

19–20 November, 1998, Tokyo, Japan
International Water Supply Symposium in Tokyo '98, on Water supply systems and the urban environment; perspectives on the future

Further information: Registration Secretariat for International Water Supply Symposium in Tokyo '98, Congress Corporation, 7th Akiyama Bldg., 5–3 Kojimachi, Chiyoda-ku, Tokyo 10–2, Japan. Tel.: +81 3 3263 4031; fax: +81 3 3263 4032.

24–28 November 1998, Bad Elster, Germany
WABOLU/WHO International Conference on Water, Sanitation, and Health: resolving conflicts between drinking

water demands and pressures from society's wastes

Further information: Ms Gertrud Schlag, Inst. Wasser-, boden- und Lufthygiene, PO Box 330022, D-14191 Berlin, or Dr Ingrid Chorus, fax: +49 30 8903 1830; e-mail: gertrud.schlag@uba.de



19–21 January 1999, Pragati Maidan, New Delhi, India

Water Asia 1999—International Conference and Exhibition on Asian Water Industry

Further information: Interads Ltd, A113, Shivalik, New Delhi 110017, India. Tel.: +91 11 628 3018/19, 628 5301, 628 5482; fax: +91 11 622 8928, 641 0216; e-mail: watersia@ndb.vsnl.net.in

11–19 September 1999, Granada, Spain
17th International Congress and 50th International Executive Council Meeting of the International Commission on Irrigation and Drainage

Further information: Ms Catherine Roy, Secretary of the 17th ICD International Congress, Confederación Hidrográfica del Guadalquivir, Avda de Madrid 7, 11th floor, 18012 Granada, Spain. Tel.: +34 58 29 59 84. fax: +34 58 27 06 41.

22–27 August 1999, Graz, Austria
28th Biennial Congress of the International Association for Hydraulic Research (IAHR)

Further information: Heinz Bergmann, Technical University Graz, Mandellstrasse 9, A-8010 Graz, Austria. Tel.: +43 316 873 6260; fax: +43 316 873 6264; e-mail: bergamm@hydro.tu-graz.ac.at



18–24 September 1999, Buenos Aires, Argentina

22nd World Congress and Exhibition

Further information: IWSA Secretariat, 1 Queen Anne's Gate, London, SW1H 9BT, UK. Tel.: +44 171 957 4567; fax: +44 171 222 7243, e-mail: iwsa@dial.pipex

11–13 September, 2000. Helsinki, Finland
Helsinki DAF '2000 Conference
Further information: Mr Eero Teerikangas, Finnish Water and Waste Water Works Association, Ratavirtijankatu 2A, 00520 Helsinki, Finland. Tel.: +358 9 40 5606743; fax: +358 9 1 484750; e-mail: daf@vvy.fi

new publications

Guidelines for Drinking-water Quality. 2nd edn, Vol. 3—Surveillance and Control of Community Supplies. Available from the World Health Organisation, Distribution and Sales, 1211 Geneva 27, Switzerland. 238 pp.; paperback; price: SwFr 72; ISBN: 92 4 154503 8.

The first edition of *Guidelines for Drinking-water Quality*, published in 1984–85, was widely used as a basis for setting national standards to ensure the safety of the water supply. It established guideline values for a large number of water constituents and contaminants, covering microbiological, biological, chemical, organoleptic, and radiological aspects. All the recommended guideline values in Volumes 1 and 2 of this new edition have been reviewed and, where necessary, updated in the light of new scientific information. In addition, many drinking-water contaminants not included in the first edition are evaluated.

Volume 3 describes the methods used in the surveillance of drinking-water quality in the light of the special problems of small-community supplies, particularly in developing countries, and outlines the strategies necessary to ensure that surveillance is effective. It is also concerned with the linkage between surveillance and remedial action and with the forms that remedial action should take.

Performance in water distribution—a systems approach. By S. T. Coelho. Available from John Wiley & Sons Inc., Baffins Lane, Chichester, West Sussex PO19 1UD, UK. 225 pp.; hardback; price £50; ISDN: 0 86380 219 2.

This book is the first in a series that aims to present reviews of recent developments and associated research, and the application of that work to engineering, operational, operation and management of water systems. Dr Coelho's book, *Performance in Water Distribution—a Systems Approach*, constitutes a new and comprehensive effort to analyse and quantify the technical performance of water networks. Improved definition and an understanding of such performance is achieved at the global level, and in each of a variety of fields analysed, in an innovative and systematic way. The performance assessment framework that is employed allows a shift in the way engineering problems are formulated in water supply, leading to a greater control of the objectives of the analysis and improved sensitivity. The systems developed by the author are a unified and consistent approach to the problems involved in studying a wide range of operating conditions.

Water!—Evolution of Water Supply and Sanitation in Finland from the mid-1800s to 2000. By Tapio S. Katko. Available from: FIWA, Ratavirtijankatu 2 A, FIN-00520 Helsinki, Finland. Tel.: +358 9 148 4744; fax: +358 9 148 4750; e-mail: vvy@vvy.fi 103 pp; hardback; price 150FIM + P&P 70FIM Europe, and 130FIM Rest of World; ISBN: 952 5000 12 5.

Water! Describes the evolution of urban and rural water supply and sanitation in Finland from the mid-1800s until today. The book also deals with water administration and legislation, water sector education and research, sectorised enterprises and international cooperation.

Water supply and sanitation provides a basis for community and economic development. These services were created by a demand that crystallised into the words: thirst, fire, productive activity and hygiene. At the same time water and sewage services in Finland have been, and still are, forerunners of environmental protection, and represent a high international level.

This summarised English version of the original book of about 400 pages includes about 50 photos and illustrations, and several interviews and stories from various parts of the country.

Managing Water Resources to Meet Megacity Needs—Proceedings of Regional Consultation. Available from: Asian Development Bank, PO Box 789, 0980 Manila, Philippines. 425 pp.; paperback; Publication Stock no. 030294, ISBN: 971 561 055 2.

This book contains summaries of case studies from the cities of Bangkok, Beijing, Delhi, Dhaka, Jakarta, Karachi, Manila and Seoul, and overviews from the cities of London, Singapore and Tokyo. Theme papers are presented on Water Resources Management, wastewater, pollution and water re-use, institutional arrangements, service levels and urban poor, pricing and demand management and water utility issues. Guidelines which were prepared during the consultation and a comparative analysis prepared after the consultation are also included. The book is expected to be useful to any agency involved with the management of water in large cities of developing countries.

Phosphorus Removal and Recovery Technologies. By S. Brett, G. K. Morse & J. N. Lester. Available from: Selper Publications, Selper Ltd, 79 Rusthall Avenue, Chiswick, London W4 1BN, UK. 142 pp.; paperback; price: £25;



new publications ■

ISBN: 0 948411 10 0.

Sustainability is becoming an increasingly important concern for both industry and government, and is increasingly reflected in governmental policy and corporate strategy. Sustainability is a philosophy which has influenced the development of a number of initiatives, from international agreements such as the Rio Summit to a range of detailed techniques such as life-cycle assessment (LCA) and environmental management, which support a transition to a sustainable future.

Phosphorus is an important element, and indeed essential to life itself. Used extensively by mankind, it has made a major contribution to agricultural and industrial development. However, the release of phosphorus to surface waters, and its consequent contribution to eutrophication, has also led to increasing water quality concerns. Policies are therefore being implemented in Western Europe and throughout the world, to reduce the levels of phosphorus entering surface waters by the implementation of removal technologies.

The development of phosphorus removal techniques has been an ongoing process since the 1950s. Indeed, there is no environmental nor technological reason why phosphorus cannot become a sustainable element. As well as technologies which further facilitate the recycling and beneficial re-use of phosphorus. It is therefore of considerable interest to undertake a review of those technologies which can assist in supporting a strategy moving phosphorus towards sustainability.

This document is therefore a comprehensive review of the current state of technologies for the removal of phosphorus from wastewater, and the recovery and re-use of phosphorus. It explains the need for phosphorus removal and describes the current removal processes in terms of technology, development, cost and performance.

Community initiatives in urban infrastructure. By A. P. Cotton, M. Shail & W. K. Tayler. Available from Loughborough University, Leicestershire, LE11 3TU, UK. Tel.: +44 (0)1509 222885; fax: +44 (0)1509 211079; e-mail: WEDC@lboro.ac.uk 96 pp.; paperback; 1998; Price £4.95; ISBN: 0 906055 56 3.

This manual investigates the extent and nature of the involvement of low-income urban communities in the provision of their local infrastructure.

It also provides guidance for policy-makers and professional staff or urban government, development agencies, non-government organisations and small- to

medium-sized enterprises for prompting an increased involvement of communities in the procurement of neighbourhood (tertiary level) infrastructure.

Cases relating to water supply, sanitation, drainage, access, paving, street and security lighting solid waste removal and community buildings are examined.



Treatment Process Selection for Particle Removal. Available from the AWWA Bookstore, 6666 W. Quincy Avenue, Denver, Colorado, 80235, USA. Tel.: +1 303 794 7711; fax: +1 303 347 0804; e-mail: bookstore@awwa.org Catalogue no.: 9071, hardback; 375 pp.; 1998; ISBN: 0 89867 887 0.

In 1988, J. Dirickx, President of the International Water Supply Association (now International Water Services Association, IWSA), and J. Gilbert, Chair of the AWWA Research Foundation (AWWARF), recognised a shared interest in providing consumers with safe, aesthetically pleasing, and affordable drinking water. Based on these common goals, the IWSA and AWWARF decided to embark on a joint research effort that would provide benefits to their members and consumers. The project they selected was the development of a guidance manual for treatment process selection for particle removal.

The objective of this project is to develop a comprehensive source book providing criteria that should be used in the selection of water treatment processes and treatment trains to achieve specific water quality goals and objectives. Recent water-borne disease outbreaks caused by *Cryptosporidium* and other pathogens in North America and other regions of the world have often been attributed to inadequate treatment processes for particle removal.

Many water utility managers are considering the upgrading of adding treatment processes to ensure inactivation or removal of pathogens, and to achieve their water quality goals. Authored by a committee of international experts, this book provides a wealth of information on both theory and practice for optimisation of particle removal. Because of the high variability of source water quality, this book provides a special emphasis on piloting potential process design approaches that will generate data useful in identifying which combination of processes is most efficient and cost-effective.

Both the IWSA and AWWARF believe that this book will provide long-term valuable assistance to the drinking water community, world-wide.

new products and companies

DATA ACQUISITION UNIT TO HELP MONITOR ON-SITE WATER MEASUREMENTS

Alphée 2012 is a new data acquisition unit designed for hydrometry, sanitary engineering and environmental monitoring. Developed by the French firm Hydrologic, it can calculate virtual measurements using physical data. The system can also send alert messages if predetermined limits are exceeded.

The Alphée 2012 comes with four analogue inputs (14-bit resolution), 4 digital pulse inputs, 4 On/Off inputs, 2 relay outputs and 2 general purpose RS232C interfaces, with settings up to 19 200 Baud. The operator can set parameters, consult current values or manage data acquisition in local or remote mode by means of a PC equipped with user-friendly software running under Windows. The Alphée 2012 offers real-time calculation of the associated current values of all physical or virtual measurements. These include filtered measurements, gradients, totals, averages and hourly maximum and minimum values.

The unit monitors real or virtual values in relation to configured thresholds with a relay output (such as gate control, sprinklers, samples, or dosing pumps). If thresholds are exceeded, the Alphée 2012 can send an alert to a PC. Messages may then be relayed to a pager network.

The Alphée 2012 is housed in an IP40 steel box that can be attached to a DIN rail. Highly resistant to electromagnetic disturbances, it also guarantees meteorological functions over a wide range of temperatures (−40 °C to +60 °C).

The system is ideal for monitoring

WATER MANAGEMENT CONSULTANTS DEVELOPS ARTIFICIAL RECHARGE MODEL FOR ARIZONA MUNICIPALITY, METROPOLITAN DISTRICT

Water Management Consultants is developing a two-dimensional, variably saturated flow model on behalf of the Metropolitan Domestic Water Improvement District (MDWID) and the town of Oro Valley in Arizona for a large proposed in-channel artificial recharge project.

The \$30–40m project entails the potential recharge of about 28 000 acre-feet per year of water made available through the Central Arizona Project. Two primary spreading basins are planned in Big Wash and Canada del Oro Wash located in the north western Tucson area. The washes are generally dry, except during floods, and provide an attractive location for artificial recharge.

Water Management Consultants was commissioned to develop an approach to quantify the potential infiltration through the Fort Lowell formation to the water table by instrumenting and evaluating a natural recharge event stemming from a flood. Water Management subsequently proposed involving tracking the evolution of the wetting front and changes in soil saturation through the shallow alluvium and Fort Lowell Formation, and using the data to develop and calibrate a two-dimensional variably saturated flow model that can be used to quantify the effects of the contrasting hydraulic properties at the contact.

The model will be used to evaluate if, and how extensively the contact may impede infiltration and whether or not groundwater will accumulate and perch on to the contact.

For more information contact: Mark Anderson, Water Management Consultants, 2/3 Wyle cop, Shrewbury, Shropshire SY1 IUT, UK. Tel.: +44 (0)1743 231793; fax: +44 (0)1743 232894.

water levels in lakes, irrigation channels and rivers, or for verifying flow rated and physical–chemical parameters in sewer systems, water treatment plants or storm tanks. The Alphée 2012 can also be used as a dedicated peripheral unit in remote monitoring systems, e.g. for irrigation networks or sewer systems. For this type of application, the unit comes with a number of local control functions based on set-point values.

For further information, please contact: M. Francis Garcia Santana, Hydrologic, 4 rue du Tour de l'eau, B.P. 278, 38407 Saint Martin d'Herès

Cedex, France. Tel.: +33 4 76 03 74 74; fax: +33 4 76 42 40 70; web: www.microtec.net/~amoulin

FEDERGASACQUA JOINS NATIONAL CENTRE FOR ENVIRONMENTAL TOXICOLOGY AT WRc

Federgasacqua, the Italian association of water and gas utilities, has become the first organisation of its type outside the UK to join the National Centre for Environmental Toxi-

cology (NCET)—based at the WRc. The organisation has signed a 2-year contract with the WRc to give its members access to authoritative and reliable information on the impact of chemical contaminants on man and the environment.

The NCET is well known as a centre of excellence in this area, providing consultancy, advice and information based on expertise in many areas—ranging from toxicology to environmental fate.

Federgasacqua members will have access to an NCET/UKWIR database which contains detailed information on over 400 chemicals. The database has been developed and maintained by NCET over several years for UKWIR Ltd, a collaborative body—comprising all the UK water service companies—to promote common research in the UK water industry. Federgasacqua members will also be able to use NCET consultancy services at membership rates. In addition, through the NCET, members will have a link to key players in the UK water industry, including the Environment Agency, government departments and water utilities.

Andrea Lolli, president of Federgasacqua comments:

'There is no doubt that the UK water industry is—in some areas—more advanced than in Italy. By joining the NCET, we are taking advantage of the wealth of experience and expertise that has been built up over many years in the UK. Our members will have access to the NCET database on toxicity and will be able to rely on the NCET for advice—especially in cases of emergency—such as water pollution incidents.'

For further information please contact: Brian Crathorne, Tel.: 01491 571 531 or Sara Hall/Lindsay Bearcroft at Citigate Technology, Tel.: 01604232223.

UNITED UTILITIES PLANT DELIVERS CLEAN WATER IN SOUTH AUSTRALIA

The Summit Storage water treatment plant, serving residents of hillside communities around Adelaide, has been handed over for operation to United Utilities Australia in a bid to provide residents with crystal clear water.

'Until now, drinking water in this area has been more like a milky soup than the clean, healthy product our customers around the world expect to receive' said Graham Dooley, United Utilities Australia Managing Director. 'This new plant, which has a daily capacity of 70 million litres, will bring a whole new quality of life to more than 30 local communities.'

Summit Water is one of 10 water treatment plants being provided by United Utilities and its consortium partners—Bechtel Enterprises and Australian finance AMP Investments. They will be located along a 400-km stretch of the river Murray—the raw water source at the heart of the problem. On completion, the plants will provide clean water to more than 100 000 people in South Australia.

For further information, please contact Alan Price, Tel.: +44 (0)171 307 0309.

HOECHST EVALUATION DATA CONFIRMS SPEED AND SENSITIVITY

The capability of ChemScan to count viable cells in water samples within 90 min, without pre-incubation, has been assessed by Hoechst Marion Roussel, Germany.

The extensive 4-month evaluation showed that the accuracy, precision, sensitivity and range of the standard plate count method was at least matched by the ChemScan. For purified water samples, the ChemScan system generally detected up to one order of magnitude higher total viable counts, probably due to underestimation by the plate count method.

In addition, results indicate that the ChemScan has a detection limit of one viable cell per sample and a detection range of 1–10 000 cells per filter. The plate count detection

range is 1–200 CFU per filter, which highlights the capability of ChemScan to improve productivity by reducing the need to carry out laborious dilution steps.

With regards to total testing time, the team at Hoechst Marion Roussel found that filtration, labelling and analysis was achievable within 90 min, compared to the 2–5 day incubation period of the plate count method.

The report concludes that the ChemScan appears to be well suited for routine microbiological water analysis. These findings have been published and will also be presented at the Exhibition for Advances in Pharmaceutical Manufacturing Technology for Tomorrow in Basel, Switzerland next year.

For further information contact: Chemunex Germany, Hindeburgstrasse 44, D-73728 Esslingen, Germany. Tel.: +49 (0)711 931 50380; fax: +49 (0)711 931 50310.

FIRST COMPONENT OF SHANGHAI'S US\$420M WATER AND ENVIRONMENT PROJECT BEGINS OPERATION

The first of six components forming the Shanghai Environment project—designed to improve drinking water quantity and quality while reducing and controlling pollution—is now in operation following an official opening by Shanghai's vice mayor, Xia Ke Qiang. The Huangpu River Water Quality Protection component—planned and engineered with assistance from Mott MacDonald—provides a new water intake on the Huangpu River, a pumping station and a conveyor system with a capac-

ity of 5.4 million m³/day, equivalent to twice Thames Water's normal daily supply to London. This extra flow is sufficient to supply potable water to 7 million people, approximately half the population of Shanghai.

The set-up comprises a new intake further up in the cleaner reaches of the river, a pumping station and a conveyor system. It also includes major interceptor sewers to collect industrial and domestic wastewater presently discharged into the river, plus improvements to wastewater treatment facilities upstream of the new intake, provision of extensive water quality monitoring facilities, investment in solid waste management and comprehensive technical assistance and training.

The US\$239m component, partly

funded by the World Bank, has been implemented through 17 contracts covering civil, building, mechanical and electrical works. As well as having a major input on design with the Shanghai Municipal engineering Design Institute, Mott MacDonald's role has included overall project management and co-ordination of the contract packages, along with detailed construction supervision in collaboration with the Tongji University Consulting Company and local engineers seconded by the client, the Shanghai Municipal Waterworks Company. The Shanghai Construction Company also played a key role

For further information, please contact: Anne Buttfield, Tel.: +44 (0)181 774 2102 or Caroline Ainsworth, Tel.: +44 (0)181 774 2205.

MAJOR EXPORT ORDER FOR OBART PUMPS

Kent based specialist pump distributor, Obart, has just despatched its first major export order. Some 18 submersible pumps, with a total order value of £50 000, have been supplied for use in North Africa. It is believed they will be installed as part of a major scheme designed to remove water from wadis for irrigation purposes.

The pumps from Tsurumi of Japan vary in size from 2² (50 mm) to 20² (250 mm). The smallest pump has a capacity to move 225 L/min whilst the largest will pump 200 L/s. Their weights vary from 11 kg to 430 kg.

According to Obart MD, Matthew Hill, 'We won this contract on our abilities to meet the demanding delivery requirement; lead time from receipt of order to delivery was just 7 days. The contract is a significant step forward for our company and I hope the first of many, taking us from being just a domestic distributor of pumps to a recognised supplier in the global marketplace.'

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