EXPECT STORIES FROM THE AVK WORLD

Expect...

DEAR READER

On 25 September 2015, the United Nations presented a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. There are 17 goals and each one has specific targets to be achieved over the next 15 years. In order to reach these goals, everyone needs to do their part: governments, the private sector, civil society and people like us.

The 6th goal is made to ensure access to water and sanitation for all. Water and sanitation are at the very core of sustainable development. It is critical for the survival of people and the planet and this goal addresses the issues relating to drinking water, sanitation and hygiene, but also the quality and sustainability of water resources worldwide.

The world we wish to live in requires clean and accessible water for all and the good news is that there is sufficient fresh water to accomplish this. The bad news is that due to e.g. bad economics or poor infrastructure, millions of people die every year from diseases associated with inadequate water supply, sanitation and hygiene. These shortcomings induce a negative impact on food security, livelihood choices and educational opportunities for poor families around the world. By 2050, at least one in four people is likely to live in a country affected by chronic or recurring shortages of fresh water.

AVK's role in sustainable water supply

Even though some might think that this falls far from AVK's daily business, I will allow myself to look at this matter slightly differently. I believe that AVK is eligible and that AVK has something to offer concerning contributions to the sustainable water supply.

As you can read in this edition of Interlink, AVK has participated in a few business delegations which all aimed at raising awareness of or even selling the Danish water supply model. Sectioning, complete control over the supply network, collection of real time data and effective leakage management teams have led to a NRW (non-revenue water) rate of just 6-8%. The best performers have even reached a NRW rate of only 4%. Indeed, AVK valves make a crucial difference in terms of reducing leakage, which you can also read about in the article about DMA.

However, speaking about NRW does not only involve leakage but also real loss through leakage, no or inaccurate metering, theft and water for flushing or fire extinguishing. Here, the AVK series 859 control valve can make a great difference. When reducing and adapting the pressure to the consumption in the distribution network, you also reduce the amount of water that would otherwise have been lost through cracks, and you accomplish a significant extension of the lifetime of the pipe network, as it is no longer exposed to large pressure variations. Read the article about our intelligent control valves which are to be mounted on a test site at Aarhus Vand.

Enjoy reading.

Michael Ramlau-Hansen

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Frontpage picture
From left to right, Trine Rask Thygesen – Denmark's Ambassador to South Africa, Malebo Mabitje Thompson – Deputy Director General of Department of Trade and Industry, Niels Aage Kjær – Owner of AVK Holding A/S.

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WYONG SEWAGE TREATMENT WORKS

By Shane Rubino,
State Sales Manager SA,
AVK Flow Control Pty Ltd

The Wyong Shire Council in New South Wales decided to upgrade the existing sewage treatment. Wyong is situated on the central coast of New South Wales, Australia.

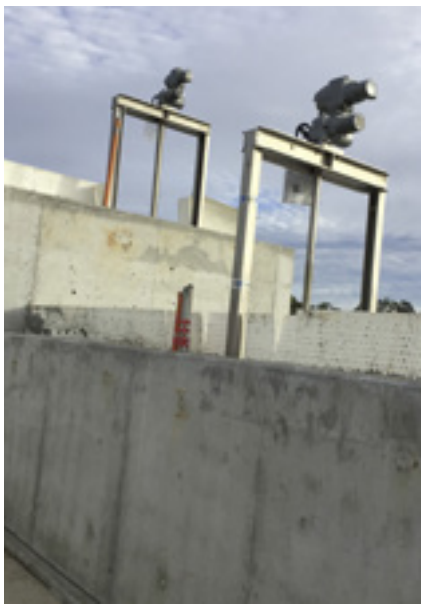
The new inlet works structure was built to house the screening of the sewage and the grit removal. Inlet works were designed to be completely covered so that the odour could be reduced especially for the local residents.

Leed Engineering won the contract to build the new works. AVK was successful in supplying the electrically actuated penstocks. The penstocks are used to isolate parts of the structure for maintenance and bypass purposes. Penstocks were manufactured by Orbinox S.A. in Spain and were all 316 stainless steel given the waste product filtering through.

Traditionally, wall mounted systems are used, but in this instance, it was requested by the local council that AVK supply a price based on penstocks imbedded in concrete. They were of the belief that the system would rule out any issues with leaks.

AVK provided four penstocks at a height of 1m and a couple at a height of 2.4m. The installation process had no major issues apart from the weather.

For further details, please contact AVK Flow Control Pty Ltd or visit www.avkflowcontrol.com.au



AVK PENTOFLOW

UNITED KINGDOM

By Kieran Fitzpatrick,
Head of UK Marketing,
AVK UK Ltd.

The AVK Pentoflow mains-to-meter range is the solution to a number of problems. The range is the most durable on the market and includes all fittings needed to go from the water main to beyond the meter.

AVK, the leading supplier of valves, hydrants, pipefittings and accessories, is seeing unprecedented interest from the utilities sector following the No Dig Live launch of its new water mains-to-meter range, AVK Pentoflow. The success proves that "AVK Pentoflow is the solution to a number of problems that utilities and developers have put up with for too long: through-life cost, resistance to damage on-site and durability when installed. Addressing all these issues shows AVK to be the one stop shop for the entire mains-to-meter range".

The AVK Pentoflow range of five products is constructed of durable materials, delivering leading edge boundary boxes, PE mechanical and push-fit connections, stop taps and ferrules.

Developed with Totex in mind

By aligning itself with utility companies' and contractors' growing focus on Totex driven requirements for a mains-to-meter range, the design has reduced installation time, maintenance and operation well below that of existing ranges. AVK is now running trials for key utility customers and discussing considerable advantages and value incentives available to largescale developments and projects.

Developed for durability

AVK believes that the durability of the AVK Pentoflow range is key to the products' success. Investment has been made in design and materials to deliver better made, longer-lasting and easier to install products and it is very gratifying to see contractors getting their hands on the products and understanding how the AVK Pentoflow

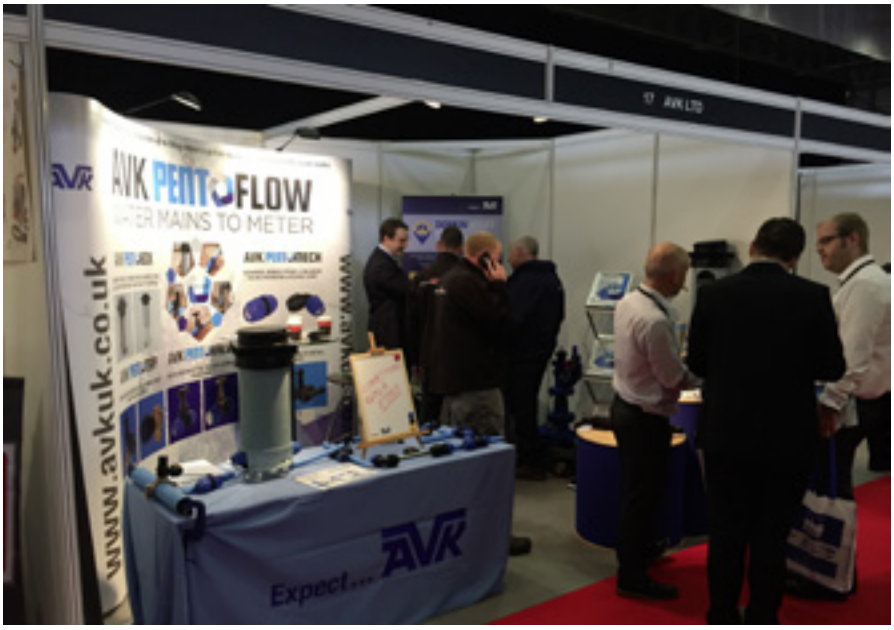
range really takes mains-to-meter a giant leap forward.

The range includes the class-leading AVK Pentobox, a meter boundary box with a composite Grade B Surface box tested to fully withstand an 8 tonne load, whether installed in the driveway, on the crossover or wherever there is the risk of damage; it will still allow AMR signals to pass uninterrupted.

The AVK Pentopush push-fit connection design has stronger but smaller construction and so will readily marry with existing and old pipework, reducing the cost of retrofit and expansion of pipe works.

On-site robustness means no more contingency/replacement budgets

The cost-saving advantage begins as soon as the AVK Pentoflow range is delivered to site, because the AVK Pentoflow range is not susceptible to the damage other less long-lasting products suffer. This means that the contractor no longer has to replace boundary boxes and fittings even before they have been fully installed.



For example, the guard pipe is made of polypropylene, not a brittle material such as fibre glass seen in other pipes, so it can withstand the rigours of the construction site for prolonged periods.

One contractor has reported to AVK that up to 50% of its installed mains-to-meter products were being replaced even before the development was finished, due to inferior products being unable to withstand everyday wear on-site.

This, plus the fact that the AVK Pentoflow range is designed for ease of installation, results in major savings. It is vitally important that key mains-to-meter products are built to withstand the wear and tear of the building site. This means we can say goodbye to contingency budgets needed to replace damaged products even before they are fully installed.

"The knock-on benefit of that is contractors can put in more competitive bids."

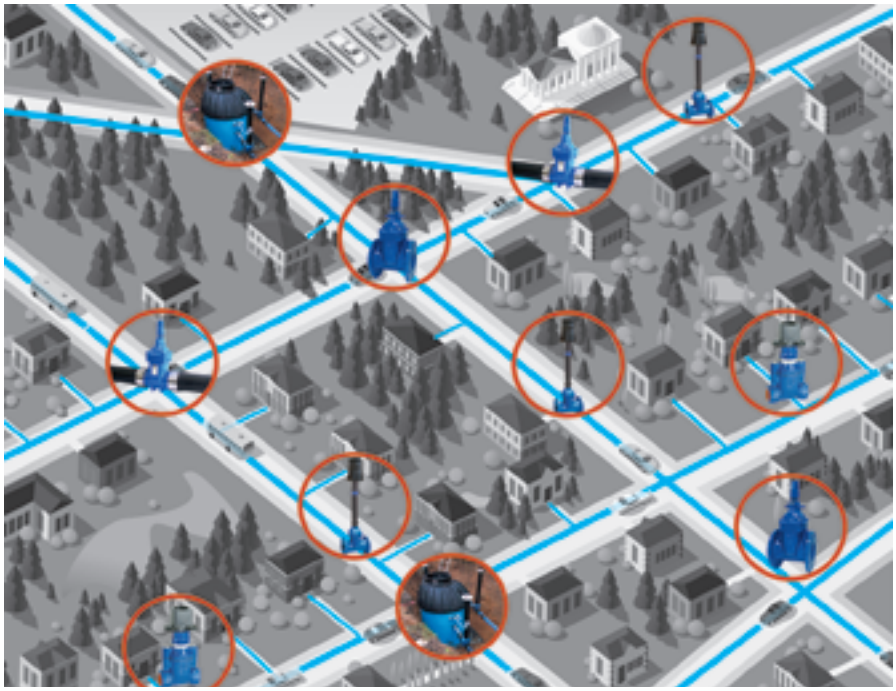
On testing the products, one self-lay company predicted they could save around £50,000 in the coming year by adopting the AVK Pentoflow range.

With the AVK Pentoflow range, AVK has genuinely asserted itself as a 'one stop shop' for every mains-to-meter product.

To learn more about AVK Pentoflow go to www.avkuk.co.uk

DISTRICT METERING AREAS

In the past years, AVK has participated in business delegations in many parts of the world and has also received many foreign delegations at the AVK headquarters in Denmark. The purpose of these activities is to inform about sustainable Danish water solutions and how to use AVK valves in these solutions.



By Michael Ramlau-Hansen, Global Brand Manager, AVK Holding A/S

When the utility company in the city of Al Ain in the United Arab Emirates modernised part of its water distribution system in 2014, the responsible engineer stated: “High quality, functional and operational valves are the backbone in any water distribution system”. This statement was based on the outcome of the city´s modernisation, i.e. to reduce the water loss from 19% to 8% through a SMART water management project. In addition, the proportion of sold water rose by 19%.

Sustainable SMART water management is about monitoring and controlling the supply system, and water authorities and operators often face a series of challenges when monitoring the water volume conveyed by networks and detecting leaks in order to preserve the water supply.

Dividing a network into sections called district metering areas (DMA) is an effective tool to prevent water loss. A high-quality reliable AVK gate valve is the perfect choice to shut off the flow between the different DMAs completely. Each DMA has one single inlet on which a water bulk meter is installed to measure the amount of water flowing into the DMA. All consumers within the DMA are also provided with a water household meter to measure how much water is spent. A negative difference between the water in the DMA and the water spent by consumers indicates a leak inside the DMA. However, if a positive difference is measured, it suggests that water from the neighboring DMA sends water into this DMA. Even though the latter may not be a direct leak, they are both harmful in relation to managing each DMA individually.

So, in order to control the water distribution system it is of vital importance to install reliable high-quality valves. And this is exactly what the Al Ain engineer meant by his statement that high quality, functional and operational valves are the backbone in any water distribution system!

A district metered area (DMA) is defined as a discrete area of a water distribution network. It is usually created by closing boundary valves so that it remains flexible to changing demands. However, a DMA can also be created by permanently disconnecting pipes to neighbouring areas. Water flowing into and out of the DMA is metered and flows are periodically analysed in order to monitor the level of leakage. DMAs can principally be categorised into three different types: single inlet DMAs, multiple inlet DMAs and cascading DMAs.

NEW VOLKSWAGEN FACTORY OPENED ITS DOORS

POLAND

By Sander Arendsen,
Sales Manager Division Water,
Wouter Witzel Eurovalve B.V.

In the second half of 2016, Volkswagen opened a new factory located 50 kilometers east of Poznań in Poland.

On a surface of 220 ha, the area of 300 football fields, this factory is producing the VW Crafter model. The production capacity of the new plant is up to 100,000 vehicles a year, which is made possible by 3,000 workers.

AVK's role in a car factoy

The facility uses water in its factory and training centre where a constant water pressure of 6 bar is required. To increase the 3.5 bar pressurised water coming from Wrzesnia waterworks to 6 bar, VW needed to design a pumping installation to do the job. The expertise of AVK Armadan, in close cooperation with Wouter Witzel, Bermad and Cyl, made the management decide to choose high quality products from AVK. The pumping installation is finally equipped with DN250 Wouter Witzel EVFS vulcanised bonded to body butterfly valves, Bermad pressure regulation valves and Cyl knife gate valves.

AVK ENSURES HYDRANT SECURITY

UNITED KINGDOM

The vandalising and setting off of water hydrants was once a seasonal problem. In hot summer months, kids saw it as a fun way to cool off, and during freezing winter it was a way of making slides. But over time, it has escalated to the point where season has no influence and hydrant abuse would happen all year round.

Therefore, hydrant abuse is considered a risk by the Fire Service, who needs fast and reliable access to hydrants in cases of emergency. It also becomes a real concern for customers when it affects pressure in the network and causes discoloration of the water they are paying for.

By Graham Charnley,
Market Sector Manager – Clean Water,
AVK UK Ltd

In 2014, AVK launched its latest hydrant security device in close collaboration with United Utilities Operations. Initially, several units were placed under trial in an area of severe hydrant abuse in Liverpool, to see how it would withstand attempts of abuse. It was tested against the industries standard outlet protection, protecting the outlet only and manufactured from a plastic outer shell and metal internal core. Following a period of two weeks, 100% of the non-AVK outlet caps were either forcibly removed or damaged beyond use. The AVK device, however, proved 100% successful, offering resistance to all attempts to remove the device.

Following on from these trials, United Utilities adopted the series 29/10 security device as the standard hydrant security to combat illegal use and general vandalism throughout their operational areas. The security device proved so successful that United Utilities have noted a significant

reduction in hydrant abuse call-outs, a reduction in water discoloration issues and a stopping of illegal use of water draw off from non-designated hydrants.

Working closely with United Utilities has allowed AVK to adapt the device for variations in field use, including creating a “universal” version to fit older hydrants and non-BS750 units, and to identify leaking hydrants via cap design and serial numbering keys to ensure control of their ownership/issue. Lorraine Murtagh of United Utilities stated that the device “has proved successful and reduced massively the number of call outs we have had with the AVK caps to be the most successful devices used.”

Since the initial launch, United Utilities installed several thousand of these units and several more thousand units are now being used by DCWW, South East Water and Northumbrian Water, solving specific local problem hydrant abuse/illegal access, and on various private sites including harbours and film studios. Various utilities are taking them to trial with the most recent trials held by Thames Water on a location with a proven history of illegal use; again 100% successful in stopping their use.

Cooperation and involvement of the relevant fire brigades imperative to their successful adoption, and we are pleased to advise that all fire brigades involved in field trials or full field use have benefited from the security of knowing that the hydrant is available and fully operational in case of emergency.

Several major utilities are currently investigating security devices and with existing units either being easily removed by non-authorised persons or vandalism, a solution that can be relied upon is required.

Looking forward, protection of the fire hydrant will be a key factor in helping to maintain water quality and avoiding water discoloration issues, which are key to many water companies’ AMP6 objectives. Whilst the law is clear on illegal use of hydrants, more reports are being seen of water utilities personnel being attacked when trying to close off hydrants that have been set off by “children”. To protect the field staff and avoid water discoloration issues, hydrant protection will need to be addressed.

In relation to these issues, this would result in potentially 150,000 litres of potable water lost, excluding any associated damage to the immediate area plus the utilities time to attend on site.

The AVK security device protects the outlet and the operating spindle on the majority of hydrants currently installed within an industry where some hydrants date back to over 60+ years old. Only AVK can offer a 100% protection to the hydrant and can claim 100% resistance to illegal attempts to remove, whilst maintaining full access to authorised users.

AVK KNIFE GATE VALVES INSTALLED AT **NEW BIOGAS PLANT**

DENMARK

By Heidi Kjær,
Communications and Marketing Coordinator,
AVK International A/S

The largest biogas plant in the northern part of Jutland, GrønGas Vrå, has just been inaugurated. AVK has delivered 36 knife gate valves for the plant, which is the size of 12 soccer fields.

The new plant will primarily be producing biogas from local cattle and pig manure, industrial waste products and food leftovers. The plant is expected to treat 300,000 tonnes of biomass every year and it will be able to supply the natural gas network with approx. nine million cubic metres of bio methane. This corresponds to the consumption of gas in 6,500 residences or the annual consumption of 4,300 cars or 250 buses. The plant creates new jobs in the local area, and when the plant is up and running, 10 employees will be hired.

Biogas manufacturing
Biogas is manufactured of organic waste which is biodecomposed in sealed off containers by means of bacteria. The bacteria that break down the biomass emit gas which is used for energy purposes. In this form, gas can be used directly as fuel for e.g. gas generators that produce electricity. Additionally, gas can also be cleansed of CO2 and hydrogen sulphide so it is converted into methane. Like methane, gas can be used in the natural gas network.

The process
The production of biogas is initiated when fresh manure is mixed with industrial waste and food leftovers in the recipient container. Then biomass is pumped into the reactors and heated to approx. 52 degrees. Biomass is kept in the reactors while manure is fermented and gas is formed. The gas is discharged from the reactor containers and degassed manure is pumped into storage containers from which farmers can pick it up.

Use of by-product
The production of biogas minimises the emission of nitrogen. When manure is being degassed, the dry matter of manure is decomposed. Consequently, manure contains a lower amount of organic nitrogen and a higher amount of inorganic convertible nitrogen. This means that a larger part of the nitrogen is obtained by plants and a smaller part of the nitrogen is washed out in the water environment. Therefore, degassed manure is also of interest to farmers, and the use of the degassed manure also has a positive effect on the yield.

Knife gate valves help manure through the process
AVK has delivered 36 knife gate valves. 30 of the valves are installed in the manifold where manure is picked up and conveyed through the plant. A few of these valves are placed on the outside of the containers and are used to transport beets (the preferred food resource) directly into the process. Furthermore, six valves are installed to fill and empty the plant's three heating modules.

The GrønGas Vrå plant is built in cooperation between the energy company E.ON Danmark and farmer Jens Peter Lunden.

THE 19TH GAS & HEATING CHINA EXPO IN BEIJING

On 21-23 September 2016, AVK attended the 19th Gas & Heating China expo in the capital of China, Beijing. AVK's production companies AVK UK, AVK International and AVK Syntec joined AVK China and AVK's business partners including TSS from China and 3S from Germany.

By Lei Dai,
Key Account Manager,
AVK Valves (Shanghai) Co. Ltd.

We all made a joint effort at the expo with each party's main products, incl. AVK gas product series from AVK International, Donkin brand products, the launch of AVIT from AVK UK, as well as our newly launched PE ball valves from AVK Plastic and finally – the Smart actuators from 3S.

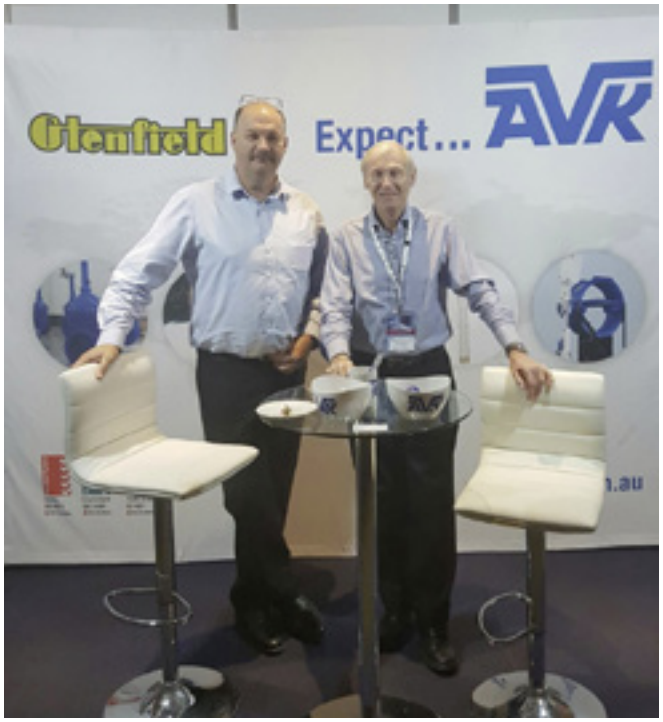
China is still an important market despite the recent economic slowdown. On the natural gas utility side, there is increasing demand for quality gas equipment due to the environmental pressure on the large Chinese cities, especially in the northern part of the country where the main energy source for heating is coal gasification. Also, the country is investing a huge amount of resources in upgrading the utility pipeline network and the control and monitoring capabilities of the utility companies. By introducing so-called Smart Grid and Utility Tunnels, China is working to realise a remotely monitored and controlled utility system which will include gas, water, sewage, telecommunications and power supply; and the main quality benchmark is from the gas utilities due to the higher safety requirement.

To comply with this governmental directive, AVK China has made a strategic partnership with a German company, 3S Antriebe GmbH, that produces smart actuators powered by batteries so AVK valves with AVIT can be controlled and monitored remotely and act as emergency shut-off valve in a fully integrated system solution. With AVIT and this partnership, AVK is now able to provide a full range solution to this smart grid initiative of the Chinese government, and AVK is today the only supplier in China who is able to supply this high-end solution.

The exhibited products and solutions received a lot of attention, interest and positive feedback from the many visitors during the expo. AVK China is now looking forward to a successful implementation of the first pilot project in China, and the opportunities it will bring.

AVK AT ANCOLD 2016 DAMS – A LASTING LEGACY

AUSTRALIA



For the 10th consecutive year, AVK Australia together with Glenfield Valves and the support from Orbinox Valves International & Premier Valves, successful partners of the AVK Group, exhibited at the 2016 ANCOLD Conference in Adelaide, from the 17-19 October. The conference was well received with over 250 industry professionals and stakeholder interest groups from around Australia and New Zealand attending.

By Vincent Tripodi,
Marketing Coordinator,
AVK Australia Pty Ltd

The conference theme for 2016 was Dams – a Lasting Legacy with Australia having great examples of legacy dam projects such as the Snowy Mountain Scheme that has served its customers well while living in a time when there are significant budget pressures on water utilities and governments.

Geoff Trowbridge, Business Development Manager of Glenfield, attended on behalf of the AVK Group. He had the honour of working closely with key representatives of the South Australia Water Corporation, who were selected as members for this year's organising committee for ANCOLD. More so, Geoff was privileged to have the support of Mike Burke of Queensland Hydraulics at the AVK stand which materially aided the long-term partnership between both companies especially as Mike is well known to many of the water industry senior engineers who were in attendance.

The conference 'kicked off' with a two-day pre-conference tour of Kangaroo Creek Dam that is currently undergoing a major dam safety upgrade followed by short visits to a number of local dams in the Barossa Valley region. The three-day event included a full day of workshop activities followed by two days of industry approved papers and presentations from middle and upper management representatives on subjects relating to dam upgrades, design, construction, risk assessment, operation and maintenance.

The capital of Australia's island state of Tasmania, Hobart, will host the 2017 ANCOLD Conference with AVK Australia committing to another year as an official exhibitor.

TRAINING CENTRE AT THE NEWLY **OPENED AVK PLANT**

SOUTH AFRICA

From left to right, Lars Kudsk – CFO of AVK Holding A/S, Tjaart Van der Walt – Director of AVK Holding S.A., Paul Hubbard – Chairmand of AVK Holding S.A., Trine Rask Thygesen – Denmark's Ambassador to South Africa, Malebo Mabitje Thompson – Deputy Director General of the Department of Trade and Industry, Niels Aage Kjær – Owner of AVK Holding A/S, Peter Thomson – Managing Director of Premier Valves Group and Brian MuGugan – Managing Director of AVK Valves S.A.

By Michael Ramlau-Hansen,
Global Brand Manager,
AVK Holding A/S

In November 2015, the Danish and South African governments entered into an agreement within the energy, agriculture and food and water sectors. Denmark has a leading position worldwide within these sectors, and AVK plays an important role in the water sector – both the Danish and the South African governments are very well aware of that.

South Africa faces immense challenges within water supply, education and unemployment. AVK supports the agreement entered last year and wishes to take active part in taking up the challenges.

On Wednesday 7 September 2016, AVK officially launched an R200 million valve manufacturing facility at Alrode in Gauteng, South Africa. The opening of the plant is in line with the AVK strategy to grow its business in South Africa and the South African region.

Furthermore, the new plant with its 4,500m² of office space, 1,200m² of training centre and 2,000m² of warehouse space has contributed to the creation of 114 permanent jobs and 150 indirect jobs. Over the next 12 months, AVK hopes to train and transfer skills to additional 1,500 non-AVK employees from South African water works in the training facility. Here, they will be trained in good craftsmanship and the use of AVK products.

AVK finds that being a local manufacturer, supported by a worldwide organisation, is of benefit to customers, partners, employees as well as to the AVK Group as a whole. AVK focuses on setting up and managing its regional facilities according to local values and regulations as well as to the social conditions prevailing in the regions in question. AVK believes that giving local people and entities the freedom to operate the daily business in due consideration of local standards and legislation provides the best conditions for a successful business.

AVK strives for global leadership with local commitment. AVK's local commitment with the new plant at Alrode boosts local business and the economy as a whole.

DISTRICT COOLING SYSTEM IN **FILINVEST CITY, ALABANG**

THE PHILIPPINES

By Ruel Estacio,
Product Manager,
AVK Philippines

After more than a year of technical compliance and evaluation, AVK was recently awarded a valve supply agreement for a DCS project in Filinvest City, Alabang, a booming business district located south of Manila, The Philippines. The Php 1.2 billion centralised cooling system will supply 420,000 square meters of office buildings with clean cooling energy.

Located within the North Gate Cyberzone in Filinvest City, the project is being implemented by Philippine DCS Development Corporation (PDDC), a joint venture between Filinvest Land Inc. (FLI) and Cofely Philippines, a subsidiary of ENGIE Group, a worldwide leader in Energy Efficiency and Environmental Services.

The district cooling system is a very reliable and highly efficient system that will generate up to 10,000TR of chilled water capacity to be distributed to the existing and future buildings within Northgate Cyberzone through underground pre-insulated pipes. Required to replace existing chilled water systems, the DCS is envisioned to mitigate carbon dioxide emissions by at least 12,000 tonnes per year and diminish electrical consumption by 39%. Project completion is targeted on April 2017 with contractor Modair, a Japanese MEPF contractor at the forefront.

The AVK order calls for the supply of HVAC valves and large diameter butterfly valves of which some valves will be buried underground, which requires spindles and valve boxes. This is the first DCS supply contract for AVK Philippines and only the third DCS project in the country. The valve products comprise a mix of ICV, AVK Anhui and InterApp items such as balancing valves, y-strainers, flexible connectors, gate valves, silent check valves and butterfly valves.

DANISH WATER SUPPLY IN THE HOUSE OF REPRESENTATIVES, WASHINGTON, DC

USA

On 27-28 September 2016, AVK joined forces with 58 other innovative Danish companies when attending a delegation visit, called Sustainability, in the United States. The delegation visit was organised by the Danish Embassy in Washington, DC and headed by the Crown Prince couple of Denmark.

By Michael Ramlau-Hansen, Global Brand Manager, AVK Holding A/S

Water was on the agenda when AVK attended a session at George Washington University and a MoU (Memorandum of Understanding) between Copenhagen and Washington, DC was signed. The MoU was named Washington, DC/Copenhagen Collaborations & Danish Sustainability Solutions.

Later, AVK had a chance to present its capabilities in the House of Representatives where the three congress members, Whip Hoyer, Dan Lipinski and John J. Duncan participated. The opening speech was made by His Royal Highness Crown Prince Frederik of Denmark and followed by a speech given by the Danish Minister of the Environment, Esben Lunde Larsen, portraying Danish water expertise and the opportunities of a cooperation between American utilities and Danish companies.

During the session, the Danish companies also presented solutions for energy reduction and production, such as reducing water wastage in the supply network, e.g. to provide savings in energy and to enable resale of water that is otherwise lost. AVK emphasised that even though it may be Danish know-how and services, an investment in AVK products and solutions is also an investment in American jobs.

In the US, topics regarding water challenges continue to be of significant public interest and concern. Meanwhile, Denmark has experienced a remarkable level of innovation in the water and wastewater sectors. This innovation has been made possible via a successful combination of innovative utilities, ingenious water technology companies and sustainable legislation from the Danish authorities. This collaborative effort has enabled progress in three important areas: water resource management for sustainability; efficient water distribution and water conservation; and energy neutral water and wastewater management.

SUCCESS AT THE ADELAIDE DESALINATION PLANT

AUSTRALIA

About the Adelaide Desalination Plant

The Adelaide Desalination Plant (ADP) at Lonsdale is SA Water's largest desalination plant and was built to provide long-term water security for South Australia. The plant has been delivering drinking water since 2011. In full operation, the plant is capable of delivering 100 gigalitres (GL) per year. This is about half of Adelaide's annual water needs.

AVK Flow Control has been consulting with the Adelaide Desalination Plant to provide an optimal solution to the very high level of salinity in the plant, which has caused severe corrosion on the valves after very few cycles.

By Shane Rubino,
State Sales Manager SA,
AVK Flow Control Pty Ltd

AVK Flow Control was given the opportunity to install a few trial valves into the plant with the support from its partner InterApp that has a proven track record in such valve trials for desalination plants. AVK Flow Control contacted InterApp to schedule an on-site presentation discussing the benefits of the InterApp Desponia butterfly valve.

The team at the desalination plant was extremely impressed with the varying types of solutions AVK and InterApp could offer and ordered a total of 18 Desponia valves in sizes from DN100 to DN700. As a result of this success, the same order will be used in another major trial and if successful open the door for a long-term relationship between AVK and the Adelaide Desalination Plant.

For further details, please contact AVK Flow Control Pty Ltd or visit www.avkflowcontrol.com.au

BRAZIL CONSIDERING DANISH SOLUTIONS

DENMARK

In the beginning of September, the President of SABESP, Mr Jerson Kelman, visited Denmark to see how a wastewater treatment plant is able to produce more energy than it uses. Denmark's biggest wastewater treatment plant, Lynetten in Copenhagen, was hosting the visit to show how collected sludge is being transformed into energy.

Lynetten is equipped with AVK valves, both gate valves and knife gate valves with actuator fitted, since this type of unit is considered to be of the least energy consuming types of valves.

By Michael Ramlau-Hansen,
Global Brand Manager,
AVK Holding A/S

In Denmark, wastewater is considered a resource rather than a problem. All wastewater is collected and led to a wastewater treatment plant where it is cleansed and separated into sludge and clean water respectively. The water can then be led back into nature without any inconvenience to the surroundings. By way of example, we like to display how much we are in control of our cleansing processes, and how it is possible to swim in the docks in the large cities without any harmful consequences. Sludge is led into a digester in which biogas is produced. This biogas can be used as fuel in a gas engine running a turbine, or it can be used in a boiler that produces heat.

By always bearing energy production in mind and always optimising processes to consume as little energy as possible, it becomes possible to increase the amount of excess energy. The electrical part of the excess energy can be sold and used by the water supply networks to run pumps and other electrical equipment. Electrical energy created at a wastewater treatment plant is categorised as green energy (renewable energy), and green energy minimises the use of black energy (energy produced by means of fossil fuels). Simultaneously, if the water supply network is attentive to not using more energy than necessary, e.g. by reducing its NRW level below 10% or lower, then a situation will occur when the entire water cycle can become energy neutral – from water is captured until it is released back into nature.

The best wastewater treatment plant in Denmark produces approx. 150% more energy than the wastewater treatment plant actually use. If additional organic waste is added, such as food waste from households, the production of surplus energy can rise to approx. 260% surplus energy, which is the case at Lynetten, Copenhagen. But this result takes an effort. All employees must think in energy efficient solutions.

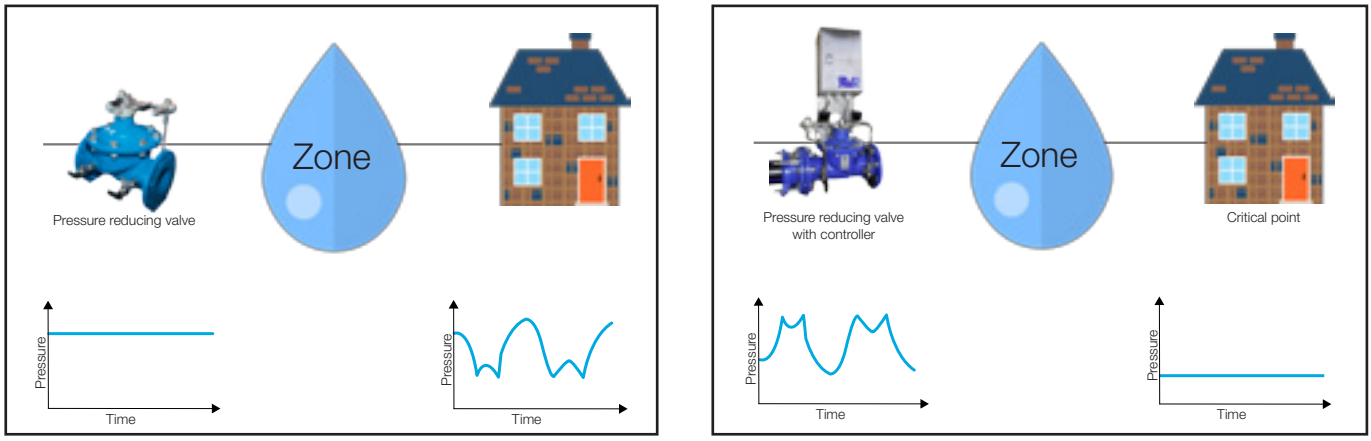
AVK's part in the solution

Regarding AVK's part in the solution, it makes sense to look at how much energy a valve with actuator uses to operate and how big the headloss is within different types of valves. The bigger headloss, the more energy is needed to pump water or wastewater through the actual valve.

In general, various valve types may not be very different from one another, but if it is necessary to pump water through a lot of the same type of valves, energy consumption may rise considerably. The new AVK app can make such calculations and analyse the headloss energy of different valves, and as a side effect it shows how much CO2 the atmosphere can be protected from.

So when the executive manager of one of the world's biggest water suppliers takes the time to visit Denmark to look at wastewater and thus energy solutions, it is because we have a really good business case.

PRESSURE MANAGEMENT WITH INTELLIGENT CONTROL VALVES FROM AVK



AVK offers various solutions to reduce water loss in the water distribution network. So far, we have primarily described leakage monitoring and leakage reduction by recommending high-quality and long-lasting shut-off gate valves. But another solution – which AVK is also able to be part of – is pressure management.

By Michael Ramlau-Hansen,
Global Brand Manager,
AVK Holding A/S

Pressure management is considered one of the most beneficial, important and cost effective leakage management activities. Pressure management is based on district metering area (DMA), which is a defined area with only one inlet for water flow. DMA is aimed to reduce pressure within the area to a minimum without affecting consumers. However, there is no point in keeping the same high water pressure in the network during nighttime as has been defined for daytime. Another aspect is that when water consumption is low, pressure in the network increases to the maximum adjustable pressure, and when water is consumed, pressure drops or fluctuates according to consumption. This means that the pipes are constantly exposed to variable pressure, which will eventually wear out the pipes and cause a rupture; a kind of metal fatigue.

In pressure management, critical points must be established to control and change water pressure by means of a control valve. A critical point is a decisive place within the DMA in relation to water supply; it could be an apartment building that must be able to deliver water to the top floor, or a large water consuming industry like a brewery, dairy or the like. Such critical points can be prioritised according to daily routines or other parameters important to water supply safety, and thereby, the critical points regulate the pressure level in the DMA.

It is well known that one of the major factors influencing the leakage rate is high pressure in the distribution system and thus, lowering the pressure will save water. You can calculate water savings by using AVKs new toolbox app. So in order to avoid fluctuating pressure in the distribution system, it is possible to control a fluctuating pressure at the inlet. The critical points in the DMA keep an eye on the pressure level and constantly send signals to the control valve that automatically adjust pressure accordingly.

AVK has built a test valve for Aarhus Vand A/S. It will be installed between two supply areas (DMAs). The test valve is a series 859 control valve with an electronic box to receive any signal expected in connection with pressure regulation, temperatures, flow or pressure sustaining. The electronic box communicates by means of either cable, wi-fi, GPRS or other airborne signals. The two DMAs involved in this project will assist each other in case the water supply in one DMA is either too low or too high.

The two DMAs are located in different altitudes, so it will be interesting to start adjusting the control system. In the next edition of AVK Interlink, we will bring an update about the installation.

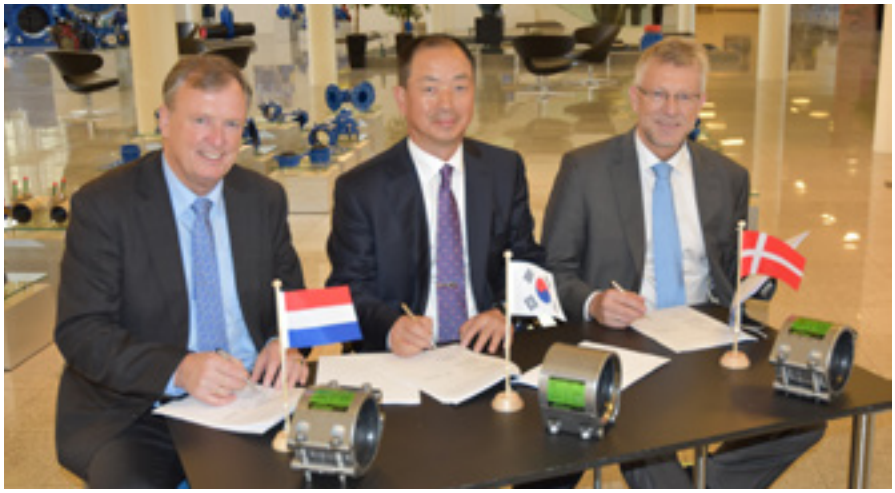
SIGNING OF LICENCE AGREEMENT THE NETHERLANDS

On Wednesday 2 November 2016, a very important "Private label" and a "Licence agreement" were signed between Mr Yoo, In-Tai, CEO of Jeong Woo Coupler South Korea and President of the Board of AVK Nederland, Mr Morten S. Nielsen and Managing Director of AVK Nederland, Mr Hendrik Kwakkel.

By Hendrik Kwakkel, Managing Director, AVK Nederland B.V.

According to the agreements, AVK Nederland is to start up selling and producing the complete programme of stainless steel couplers and repair clamps under Private label.

After a period of max. two years, the production of this programme will be performed at Vaassen, The Netherlands in a new factory. This programme will be sold worldwide to all the well-known segments of AVK, including the industrial segment.



HOW TO REDUCE WATER WASTE?

DENMARK

By Heidi Kjær,
Communications and Marketing Coordinator,
AVK International A/S

On 27 October 2016, AVK had invited employees from Danish waterworks to a seminar about water waste and how to reduce this by using water saving solutions.

The programme included presentations by several internal and external specialists. Market Manager of AVK Denmark A/S, Tommy Porsmose, welcomed the participants and Henrik Malmberg of Leif Koch A/S gave a presentation about possibilities within leakage search.

Leif Koch has numerous solutions and especially the automated leakage searching tools attracted attention. Henrik Malmberg explained how special surface boxes from AVK can be mounted with noise loggers from Leif Koch A/S.

Additionally, he introduced new innovative initiatives such as a Smart Ball. Leif Kock's Smart Ball has a microphone and camera incorporated. The ball is dropped into the supply network and thus films leakages if any. Several waterworks employees could see how they could benefit from this solution.

A user's experience – district meter areas and leakage search

Next up was Torben H. Petersen of Nordvand A/S. He shared Nordvands experiences with district meter areas (DMA) and leakage search. The company has sectioned Gladsaxe and Gentofte into DMAs and installed some AVK surface boxes with Leif Koch A/S noise loggers. Nordvand A/S has discovered that it takes several methods to find leakages, which is why they advocate the use of several leakage searches such as systematic

Torben H. Petersen of Nordvand A/S sharing their experiences with district meter areas (DMA) and leakage search.

Henrik Malmberg of Leif Koch A/S talked about the AVK cooperation with special surface boxes and noise loggers.

leakage search, loggers and baseline measuring. According to Nordvand A/S, the loggers have found approx. one third of the detected leakages.

AVIT app and DMA

After a short break, Global Brand Manager of AVK Holding A/S, Michael Ramlau-Hansen demonstrated the importance of DMA, how it enables quick leakage search, and which AVK products can be used. Subsequently, he introduced the new AVK app: AVIT (AVK valve installation tracker), which is based on Google Maps. The AVIT app makes it easy to position installed valves on a map and find them later on in case of leakages.

Quality rubber makes a difference

Anders G. Christensen, Sales and Marketing Director of AVK GUMMI A/S enlightened the participants about the importance of using the right rubber and why it pays off to choose quality rubber that meets the approvals of several countries. By way of example, demands are high if a rubber compound should get approved for drinking water in Germany, France and Great Britain. On the contrary, demands in Denmark are currently quite low, but a new set of restrictions are on their way regarding the approval for rubber for use in drinking water.

A user's experience – pressure control in sectors

After lunch, Michael Rosenberg from Aarhus Vand A/S talked about pressure control in sectors (DMAs) in Aarhus municipality. Aarhus Vand A/S is working on huge changes within its water structure, which is expected to be completed by 2030. The new structure means that the city will be divided into zones, which will again be divided into 12 sectors. Each sector delivers water to max. 16,000 citizens by means of at least two pumping stations per sector. Consequently, a great deal of water towers and elevated reservoirs have been closed down while Aarhus Vand A/S is testing new possibilities. This caused Michael Ramlau-Hansen to tell about intelligent control valves; valves that can be operated by remote control to lower or increase the pressure in a supply network so leakages can be avoided and water waste minimised.

The seminar ended with talks among the participants as to how AVK can help in the daily work regarding flow and consumption.

Michael Rosenberg of Aarhus Vand A/S talking about pressure control in sectors in Aarhus municipality.

AVK SOLUTIONS IN RELATION TO NRW PRESENTED IN AUSTRALIA

From 9-14 October, AVK attended the IWA World Water Congress and Exhibition in Brisbane, and more than 1,700 delegates discussed important topics within water supply and wastewater management.

By Michael Ramlau-Hansen, Global Brand Manager, AVK Holding A/S

At the reception, the Waterville LEGO model was a big attraction and opened up for dialogues about the water cycle.

Under the headline Danish Business Seminar, the Danish pavilion hosted a minor event at which a line of speakers presented Danish water solutions. AVK presented the LEAKman project that we are running with a group of Danish companies. The LEAKman project is initiated to help reduce the NRW level worldwide. The purpose is to design a sustainable SMART water management system and to select proper tools and techniques when establishing water utilities.

Control valves from AVK

In addition to our gate valve solution with surface boxes designed to hold a noise logger, the new AVIT app was presented with the features it has to enable geographical position in any given installation. Additionally, we presented our AVK pressure control system; we are in the process of finalising a control valve that can communicate with the SCADA system and other devices in the water supply network.

About the International Water Association

The International Water Association (IWA) is a unique, global knowledge hub for water professionals and anyone who is concerned about the future of water. It has sixty years' experience with connecting water professionals worldwide to find solutions to the world's water challenges. As a non-profit organisation with members in more than 130 countries, the IWA connects scientists to practitioners and communities, so that pioneering research becomes sustainable solutions. It further fosters technological innovation and drives best practice through international frameworks and standards.
http://www.iwa-network.org

After the speeches, Danish Business Forum, State of Green, Danish Water Technology Group and Confederation of Danish Industry invited the participants to a reception at the Danish pavilion, for the audience to take a closer look at Danish products. The Waterville LEGO model perfectly demonstrated how the total water cycle in Denmark works, and I believe, it was by far the most photographed exhibit in the whole set-up.

INNOVATIVE PRODUCTS CHALLENGE TRADITIONAL METHODS

UNITED KINGDOM

This year, AVK UK has been among the front-runners regarding product development. For events such as United Utilities' Innovation Day and the Water Dragons' annual innovation award, we have managed to demonstrate innovations and changes to products that have been developed.

By Graham Charnley,
Market Sector Manager – Clean Water,
AVK UK Ltd

For United Utilities' Innovation Day, AVK UK displayed its new range of water and wastewater air valves, through bore hydrant, pressure management valve, RS valves and the new range of water mains to meter products, including the boundary boxes. A lot of the products attracted much attention, with several visitors expressing an interest in understanding how they could incorporate them into their designs and projects in the future.

For the Water Dragons' annual innovation awards run by Future Water Association, AVK UK Ltd. was for the second time between the finalists with new innovative products that challenge the traditional methods of working and delivering savings in installation and maintenance costs as well as simplifying installation methods and improving health and safety of the workforce.

It is reassuring that the AVK product range matches not only the current need of the market but also the future demands with increased pressure on the water utilities to generate savings for the customer and in parallel improve working practices and design. This is the perfect platform for new and creative thinking, which we at AVK UK have embraced.

AVK AROUND THE WORLD

AVK HYDRANT IN GLOUCESTER, MASSACHUSETTS, USA

By Mika Nurmi, Managing Director, AVK Finland Oy

While visiting the East Coast (Boston area & NYC) during the fall holiday, I ran into AVK, even on a holiday!

Gloucester, Massachusetts is a harbour town by the Atlantic Ocean approx. 30 minutes north of Boston, also known from the movie “Perfect Storm”.

AVK SPONSORED SCHOOL UNIFORMS FOR THE LOCAL GOVERNMENTAL PRIMARY SCHOOL

By Andreas Geisinger, Managing Director, AVK Valves India Ltd.

68 pupils from the school together with Ramappa and Prabhu, our AVK India contact persons.

For the past three years, we have sponsored the school uniforms for the local governmental primary school.

The school is located approx. 2 km from our factory in Malur, which again is located a two hours’ drive from the Capital of Karnataka, Bangalore.

Often pupils in governmental schools can not afford a school uniform.

A typical school in rural India normally has some 50-75 pupils. Teaching is conducted by one or maximum two teachers.

AVK AROUND THE WORLD

CONSTRUCTION WORK AT COPENHAGEN AIRPORT, DENMARK

By Mika Nurmi, Managing Director, AVK Finland Oy

GAS AND SERVICE AT FAIR IN RUSSIA

By Kirill Korobitsyn, Area Sales Manager, AVK International A/S

ORIHUELA, APPROX. 60 KM SOUTH OF ALICANTE TOWARDS CALLE CLAVO

By Bjarne Pedersen, retired employee at AVK International A/S

New construction work in process with AVK valves mounted.

GREAT LOCATION FOR THE UPCOMING HOLIDAYS IN AARHUS, DENMARK

By Lise Rye Brix Østergaard, Communications and Marketing Coordinator, AVK International A/S

COMPETITION

We are happy to announce that the winners of the competition in AVK Interlink no. 47 are:

- Flemming Bindslev, KRÜGER A/S, Denmark
- Shalini, AVK Valves India Pvt. Ltd., India
- Albert van Leeuwen, AVK Nederland B.V., The Netherlands

Gifts are on their way.

The correct answer is: Supa Lock™

New competition:

Which product does this enlargement show?

Send an e-mail with the correct answer in which you state your address and the gift you would like to receive – if you win.

E-mail to: lios@avk.dk

Choose between:

Krenit bowl, black with red or yellow inside Ø12.5 cm

Picnic grill in a cooler bag

Glass decanter

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Expect... AVK