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**Subject:** PR19 Consultation  
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**Attachments:** [Responses to PR19 by A Lambert and D Pearson, 25th August 2017.pdf](#)

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To whom it may concern at OFWAT:

Please see attached responses to specific questions in parts of the PR19 Consultation Document by myself and David Pearson, both international NRW management specialists based in the UK. As PR19 doesn't mention pressure management, we have taken up the invitation of Trevor Bishop (at his Keynote Presentation on PR19 at the IWA Water Efficient 2017 Conference at Bath in July) to include additional comments on the importance of measuring, publishing and managing average pressure within Utilities in PR19.

Also, the UARL formula shown in the Appendices is a Europe-wide form of UARL equation with coefficients adjusted for systems where the service pipe length main to meter is known. That equation is less suitable for UK than the original equation developed in 1999, which can calculate UARL up to the point of delivery (Unavoidable Distribution Losses) or Total Losses including UGSPs, depending upon whether the equation used excludes or includes the UGSP term. As there has also been significant disinformation circulated in UK regarding UARL and ILI (see <http://www.leakssuite.com/ili-in-uk-update/>) we would not wish to see such incorrect information perpetuated in the PR19 consultation. If you and your colleagues who are dealing with the PR19 responses require any explanation or advice on any aspect of the UARL formula, Allan (as the originator who has applied it internationally) is willing to offer such assistance pro bono to try to ensure that your decisions are not based on incorrect information or assumptions. You may also be interested to know that a full Netherlands ILI data set is now on LEAKSSuite at <http://www.leakssuite.com/netherlands-ilis/>, and an ILI overview by country at <http://www.leakssuite.com/ili-overviews-by-country/>, which includes anonymous data for 2011-12 from several England/Wales Utilities.

This e-mail is also copied to Trevor Bishop.

We hope these comments and responses will assist you in your deliberations.

Allan Lambert and David Pearson

**Additional Comments:**

Since the excellent progress in UK leakage management during and after the 1995/96 drought, it is welcome to see that PR19 now acknowledges at least one aspect (UARL) of the excellent progress which has been made internationally by the IWA Water Loss Task Force/Specialist Group since 2000, and the EU Reference Document 'Good Practices on Leakage Management' (2015). Since 2000, UKWIR has seemed reluctant to accept IWA international performance indicators and practical research on pressure: bursts relationships which was not based on UK data (although the UARL original calibration used UK and international data). Accordingly, it has not been possible to rationally compare England/Wales technical leakage management performance with that in other countries using UARL and ILI, as average pressures for UK Utilities are neither published nor made available for such comparisons. Whilst UK Utilities were leaders (with Japan) in 1980 in recognising the influence of pressure on leak flow rates, they have not been as quick as some other countries to recognise the fundamental role that pressure management plays in reduction of burst frequency on mains and services, and the consequent extension of asset life.

Although the House of Commons Environment Committee 'Water Conservation and Supply' Report after the 1995/96 drought recommended that 'it is essential for typical operating pressures to be included in the evaluation of leakage rates in the future', Ofwat took the view at the time that pressure was a matter for the Water Companies, provided that minimum levels of

service were achieved.

A substantial part of the reduction in leakage in England & Wales since 1995 has resulted from reduction of excess pressures, with considerable innovation in equipment for flow modulation (inlet pressures being managed to rise and fall with demand, rather than increase when demand decreases) and more recently, pressure calming measures (to avoid damage from pressure transients). Yet as the reductions in average pressure from 1995 to 2016 have never been published or explained to customers, the draft PR19 seem to imply that leakage reduction has (and will) come solely from faster repairs and mains and service replacements.

It is very likely that, to meet the stretching leakage performance commitment levels proposed in PR19, further increasingly sophisticated pressure management will be more widely implemented, with a further reduction in average pressures due to lowering pressures at times of lower demand. In economics, the 'hidden hand' of the market is clearly acknowledged; in leakage control, the 'hidden hand' – or perhaps one should say, the 'elephant in the room' - is that pressure and pressure management are not mentioned at all in PR19.

Average pressures will be needed to calculate Minimum Level of Leakage Achievable (UARL), and will need to be published and figure more prominently in several aspects of the Performance Commitments. Pressure management also provides operational resilience and resilient assets. This is clearly recognised by leading countries in technical leakage management such as Netherlands, Denmark, Aquaflanders, Japan, etc, all now seeking to operate their systems with average pressures of 25 to 35 metres, see <http://www.leakssuite.com/ili-overviews-by-country/> , recognising that 'every metre counts'.

So our principal request is that now is the time for Ofwat to openly acknowledge in PR19 the key role that pressure and pressure management has played, and will play in future, in reduction of leakage. There is real potential for conflict between reducing pressures to further reduce leakage and improve resilience and asset management (fewer bursts and interruptions), and achieve higher standards of service for pressure for customers. It is surely time to bring this issue into the open, to inform customers and to seek their views, as suggested in Section 2.6, given the stated importance of engaging customers on longer-term issues.

ENDS

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