Notes On Energy Savings for the Rural Water Community and Maybe Others

We started off this year with a review of NRWA White Papers and with minor exceptions, have continued throughout 2012. So, let's wind up the year in that vein and spend the last couple months on white paper issues. This month, I thought we would deal with Transparency, a subject you may not think too much about, but which is critical to small systems and involves more than one paper. Transparency is important to us primarily because of its relation to economics. The paper, Approaches To Determining Unreasonable Risk To Health by Strawson, etal, deals with conservatism in regulatory development. Excessive conservatism carries economic penalties that need to be transparent. Some key findings:

- EPA recognizes 5 areas of uncertainty in the calculation of Reference Doses which are involved in deriving many water standards.
- Safety factors are assigned to each of these uncertainties, and the composite uncertainty arising from the interaction of all 5 has been as high as 10,000.
- These safety factors result in possibly excessive conservatism in the MCLs and cost goes up proportionately as the MCL decreases. (this last bullet is mine and not the authors')

Because of this uncertainty and the associated cost impact, especially on small systems, it is essential that clear explanation of the assumptions used in deriving a standard be presented in the justification of a standard (Transparency) so that affected communities can make informed decisions. Unfortunately, this has seldom been the case with standards currently promulgated.

In another paper, Blending Science with Policy: Precautionary Assumptions and Their Impact on Benefit-Cost Analyses and Drinking Water Standards, Bob Raucher has discussed the important aspect of how benefit/cost analyses are critically affected by conservatism, sometimes referred to as precautionary assumptions. His conclusions include:

- Conservatism is appropriate in risk assessment evaluations but not in risk management (standard setting).
- Regulatory cost estimates depend critically on precautionary assumptions.
- Costs should be based on central tendency (most likely) estimates, not most conservative when used for management decisions.
- Inappropriate conservatism also affects the evaluation of expected benefits, largely through the numbers assigned to the Value of a Statistical Life (VSL).
- Again, Transparency in the discussion of benefit cost analysis is essential if the regulated entity is to fairly evaluate a proposed regulation.

Finally, underlying this whole discussion is the concept of acceptable risk, which is treated in a third paper, Acceptable Risk in the Context of Managing Environmental Hazards, by Joshua Cohen. EPA deems the riskiest level an MCL should represent be no greater than $10^{-4}$, which in layman’s terms simply means no more than one increased health effect in 10,000 people after a lifetime (70 years) of exposure at the MCL level. Whether this risk is appropriate for small populations commonly facing higher risks may be questionable.

John E. Regnier, NRWA
highpnt@mindspring.com or (334) 462-1541