Background on The Affordability Criterion Under the Safe Drinking Water Act

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U.S. Environmental Protection Agency
The Health Threat

• 1965 – 18,000 residents of Riverside, CA, infected
• 1968 – 750 residents of Angoloa, NY, gastroenteritis
• 1974 – 5,000 residents of Rome NY, giardiasis

1970 US PHS Survey

• 16% of all systems violated mandatory limits
• 25% of systems serving 500 or fewer violated limits
• 60% of small systems had major engineering faults
• 99% of small systems violated monitoring standards
The Regulatory Challenge

Water Systems Subject to Regulation under SDWA

• 1974 – 19,236
• 1977 – 34,631
• 1979 – 180,000
  ▪ 58,768 community water systems
  ▪ 39,253 served fewer than 500 residents
  ▪ 21,585 served fewer than 100 residents
Small System Regulatory Costs

• New York small water system serving 950 people would be required to expend $675,000 to comply with the rules, a cost of more than $20,000 per family.

• Mr. Kazen “the problem is financial. . . . Regardless of what we say about exemptions, somewhere down the line within the next 7 years we are going to be faced with this problem.”
The Statutory Solution

Variances

Using the most effective treatment method, the water system still could not meet the drinking water standard (Maximum Contaminant Level or MCL) despite all reasonable technological, economic and legal efforts to do so.
The 1974 Variance Problem

• The variance would be granted only if the system could not meet the intake requirements and could not meet an MCL, despite all reasonable technological, economic and legal efforts to do so.

• Intake requirements was an intractable problem requiring subjective decisions not tetherable to firm science or existing science policies.
The 1986 Solution

• Uncouple variance from intake water quality, essentially
• Provide authority to EPA to specify
• “Best available technology”
• Could vary depending on the number of persons served by the system
• Or for other physical conditions related to engineering feasibility and costs of compliance
• “As considered appropriate by the Administrator.”
The 1986 Fatal Conceit

It was politically untenable to admit publicly that some citizens would be exposed to unsafe drinking water.
The 1996 Fix

• Required EPA to define “variance technologies” for small systems that “after examination for efficacy under field conditions, are available and affordable.”
Affordability

• Based on system size.
• The government would replace the family’s choice of how to spend their money.
• This was NOT a balancing of benefits and costs.
• The presumption was that the benefit was essential to provide, but only if it was affordable.
Individual Annual Risk

10^{-2}

10^{-3}

Basic Trade Work

10^{-4}

1 Diet Soda per day

10^{-5}

THM Drinking Water Standard

10^{-6}

10^{-7}

De Minimis Risk

THM Population Risk

Years per Case

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<th>Years per case</th>
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<td>25-99</td>
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1973 Family Expenditures

$8,348  Food, Clothing, housing, taxes

$784  Auto purchase
$750  Auto expenses
$708  Recreation
$693  Health Care
$508  Charitable donations
$285  VCR purchase
$194  2% Median post-tax income
$180  Water
$153  Reading and education
If families were willing to buy a VCR, they should be willing to spend 2% of their family income on the safety of their drinking water.

I now leave to others to discuss why this was a fundamentally wrong approach to evaluating affordability.