



Perspectives of a U.S. Utility Regulator: Water Industry Challenges & Best Practices

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What is NARUC?

- The National Association of Regulatory Utility Commissioners (NARUC) is a quasi-governmental non-profit organization founded in 1889.
- Our Members include the state Commissions (government agencies) engaged in the regulation of American utilities and carriers in the 50+ states & territories. The Federal Energy Regulatory Commission and the Federal Communications Commission are also members. NARUC has Associate Members in over 20 other countries.
- NARUC member agencies regulate electricity, natural gas, telecommunications, and water utilities.
- We provide forums for the exchange of experience/policy, legal support, lobbying, and other forms of regulatory support.



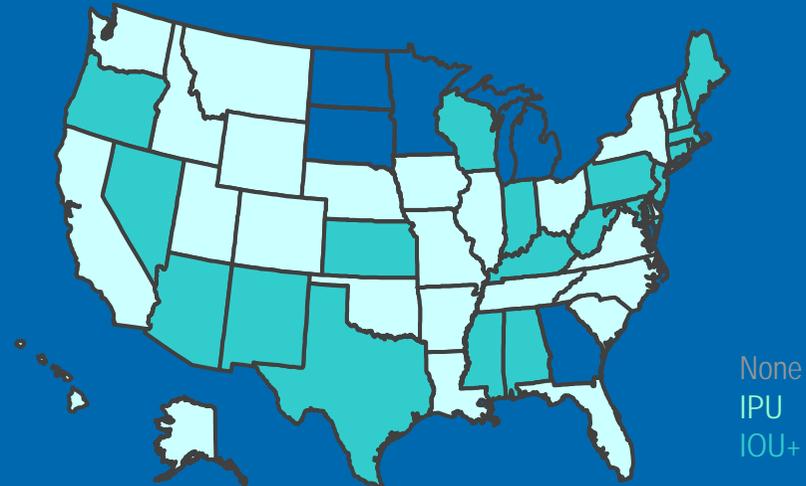
The role of regulation

- Regulation is imperfect but essential when the market is characterized by monopoly utilities
 - ▶ Lack of competitive discipline and incentives for efficiency and innovation
 - ▶ Potential for abuse of monopoly power (higher or discriminatory prices, excessive profits, and degradation of performance or service quality)
- Economic regulation is a substitute, proxy, or surrogate for the competitive market – and sometimes a precursor
- Regulation balances the interests of ratepayers and shareholders
- Persistent monopoly and the need for economic regulation are characteristic of water and wastewater utilities, as well as other vertically integrated utility systems and distribution systems such as natural gas and electricity.



Variations in regulation: J.A.M.

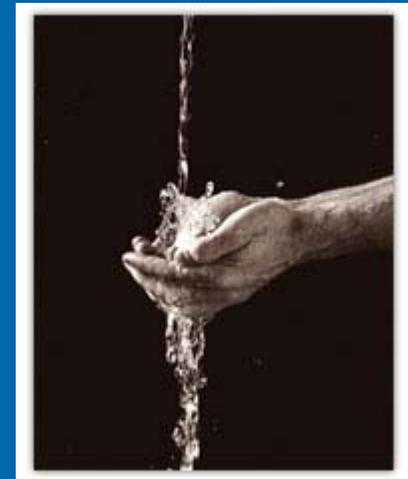
- Jurisdiction
 - ▶ Who is regulated?
 - ▶ Private, public, nonprofit
- Authority
 - ▶ What is regulated?
 - ▶ Rates, profits, finances, service quality
- Methods
 - ▶ How is regulation accomplished?
 - ▶ Traditional RB/ROR, price caps, indexes





Some jurisdictional quirks in water regulation

- Indiana. Cities can choose regulation
- Iowa. Exempts small systems (<2,000 customers)
- Florida. Counties can opt to regulate
- Kansas. Exempts systems only serving one city
- Kentucky. Wholesale jurisdiction
- New Jersey. Bd. Reviews privatization contracts
- Pennsylvania. Cities serving outside of boundaries
- Georgia, Minnesota, N&S Dakota, DC. None.
- Michigan deregulated in mid-90s; may re-regulate?

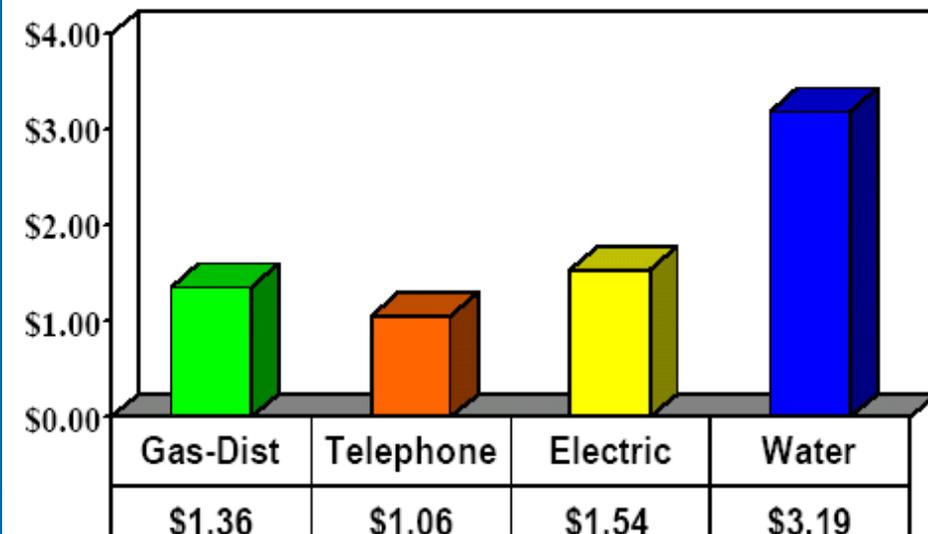




Water Industry is the Most Capital Intensive Industry

- EPA rules require large investment in filtration plants
- Large investment needed for distribution system and road repair
- More capital per revenue than all other utilities and manufacturing industries

Capital Invested per \$1 of Revenue



Source: 2004 C.A. Turner Utility Reports



Advantages of the traditional U.S. regulatory model

- Grounded in constitutional law and economic theory
- Generally well proven (100+ years, "mature")
- Balances competing interests of shareholders and ratepayers
- Provides a high level of accountability and stability
- Encourages long-term infrastructure investment
- Produces relatively coherent and consistent results
- Provides reasonable, if imperfect, performance incentives: the rate base / rate of return regulation model is a form of incentive regulation



Disadvantages of the traditional U.S. regulatory model

- Too much incentive exists for cost-maximization and over-investment
 - ▶ “Gold-plating” that needs to be checked by regulatory standards
- Too little incentive for cost control and innovation
- Emphasizes negative v. positive incentives
- Time-consuming (lag), bureaucratic, and costly
- Historical focus and reactive (e.g., no pre-approval)
- Sometimes retroactive or punitive (prudence, micromanagement)
- Perceived as “command-and control” or “central planning”
- Focuses too little on social or environmental considerations (only economic regulation?)



Innovative regulatory techniques

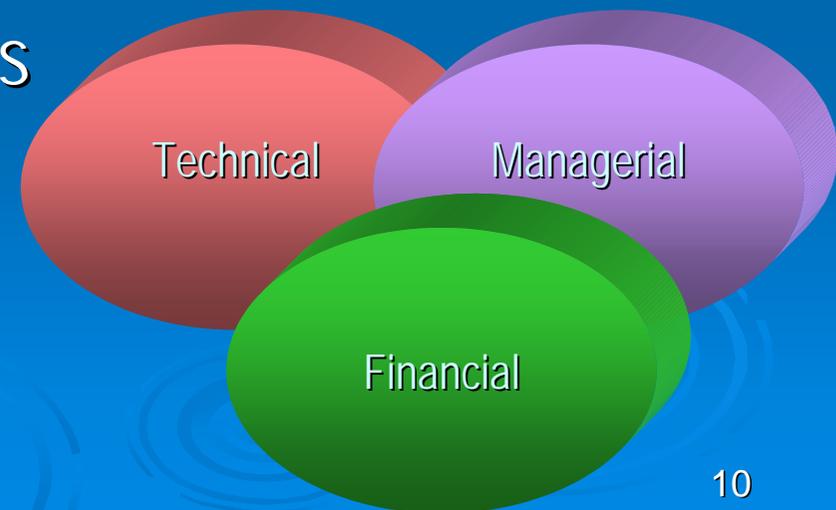
- Recognize evolving needs, including the unique character of water
- May be adopted by statute, regulation, rule, or practice
- Modify traditional regulation to achieve policy goals
- Address problem areas (regulatory lag, small systems)
- Promote infrastructure improvement, compliance
- Provide greater flexibility and incentives
- Allow experimentation in rate design





Addressing small system needs

- Simplified ratemaking and reporting (New Jersey)
- Operating-ratio method
- Rate-case assistance (Pennsylvania, New Jersey)
- State revolving loan fund (SRF) and access to funding
- Viability assessment and “check up” program (California)
- Capacity development for new and existing systems (EPA)
- Acquisition policies and incentives





Encouraging acquisitions

- Accounting adjustments for acquisitions
- Price caps and shared savings
- Accounting for contributed property
- Surcharges and recovery mechanisms
- Consolidated treatment of acquisitions (one rate charged throughout the system)
- Mandatory takeovers of nonviable systems



Procedures for Expediting Rate Cases

- Procedures for environmental compliance costs (SDWA)
- Advice letters (simplification)
- Limited proceedings (one issue)
- Alternative dispute resolution (stipulation and settlements)
- Generic proceedings (all utilities)
 - Multiple sector regulation provides many benefits



Addressing cost recovery, cash flow, and regulatory lag

- Future test year
- Depreciation rates
 - ▶ Old: composite rates; assumed long lives
 - ▶ New: depreciation studies; realistic lives
- Special-purpose surcharges
 - ▶ Extraordinary costs
 - ▶ Service-line extensions
 - ▶ Infrastructure replacement and improvement
- Better to get it right than to get it fast
- “Automatic” adjustments or pass throughs of some expenses



Adjustment clauses

- Applications
 - ▶ Purchased water (from another utility)
 - ▶ Energy (electricity and gas)
 - ▶ Chemicals
 - ▶ Testing fees (SDWA)
 - ▶ Weather (demand repression)
 - ▶ Taxes
 - ▶ Loan repayment (debt service)





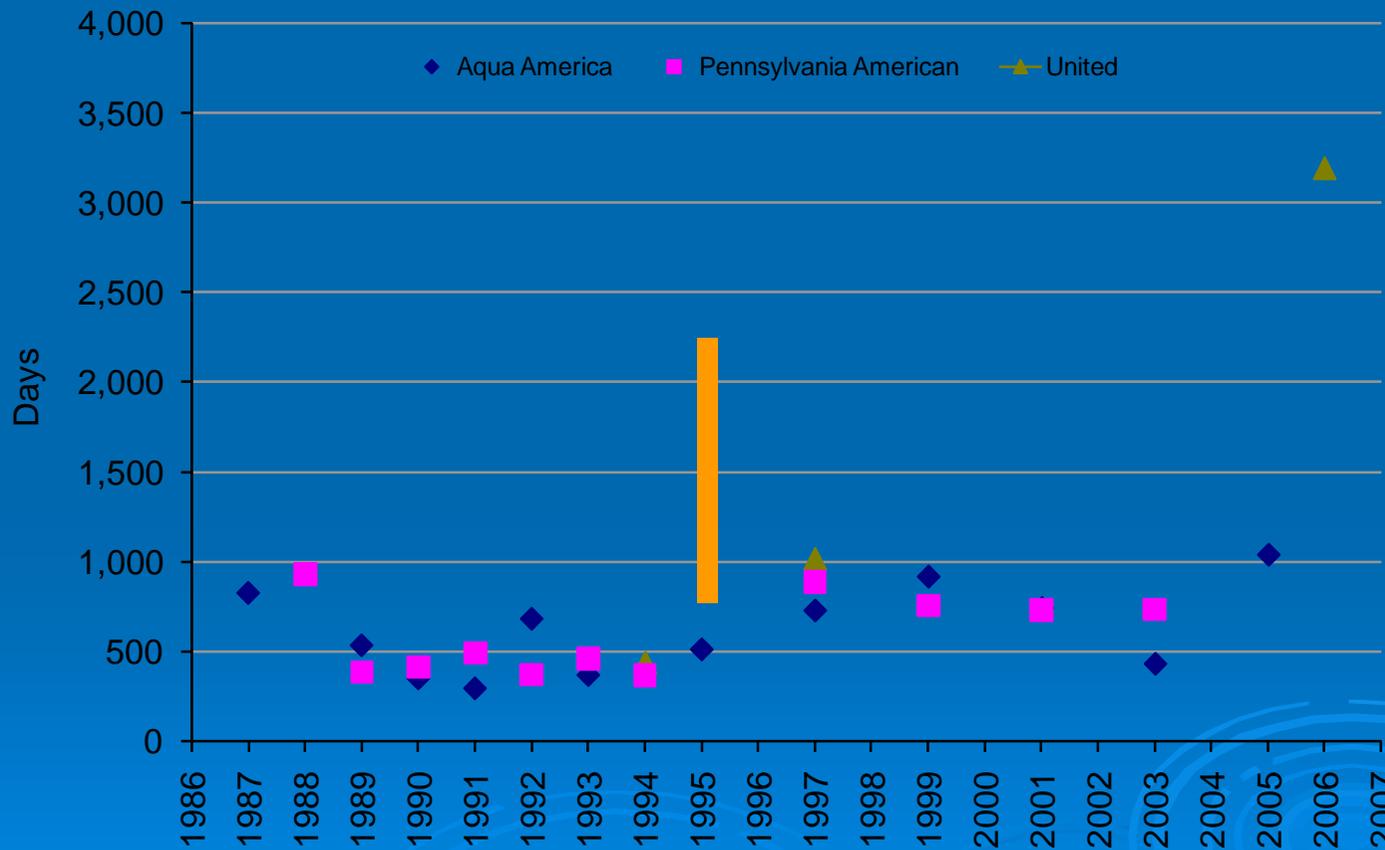
Distribution system improvement charge (DSIC)

- System benefits
 - ▶ Loss reduction
 - ▶ Pressure maintenance
 - ▶ Water quality
- Costs can be recovered on a quarterly basis v. the next rate increase
- Surcharge limited to a maximum of 5% of total bill
- Annual reconciliation audit (essential)
- Encourages accelerated infrastructure remediation
- Less frequent rate cases (reduced expense)
- Gradualism in ratemaking reduces rate shock and improves rate and revenue stability
- Pennsylvania, Indiana, Illinois, Delaware & other States



Pennsylvania rate cases before & after the distribution system improvement charge

Days since last request for general rate case filings





Rate indexing

- Ties rate changes to changes in consumer prices (CPI) or other metrics
- Simplifies and reduces regulatory expenses once the base is established
- May be useful for smaller water system
- Can be used in conjunction with incentive regulation (larger systems)
- Presents a problem if costs exceed inflation





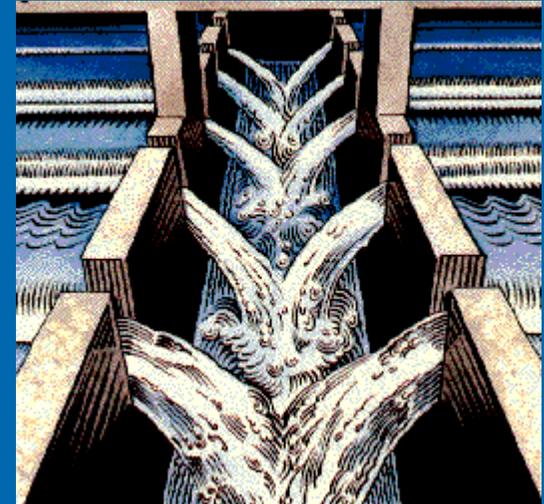
Diversification and shared savings

- Utilities may want to offer diversified services (e.g., lab services, well testing, metering and billing, bottled water, filtration, softening)
- Diversification may offer synergies
- Can help mitigate rising costs
- When creating affiliate not justified
- Maintains regulatory oversight
- Rationale for savings
- California rule: 50/50 sharing



Improving rate and revenue stability

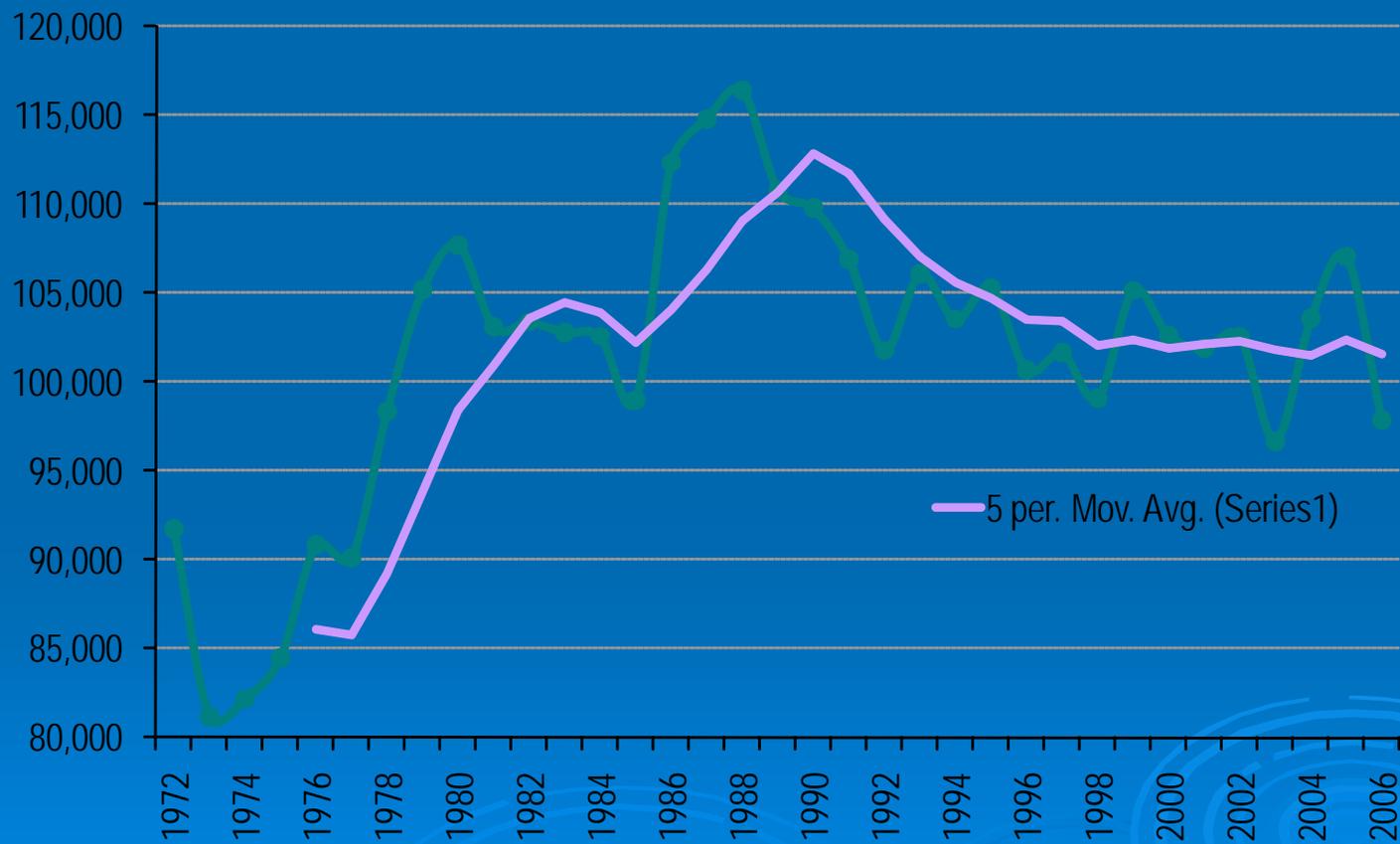
- Phased and multi-step rate changes
- Interim rates (pending a rate case)
- Balancing and reserve accounts
- Conservation and elasticity adjustments
- Demand repression adjustments
 - U.S. levels of usage are staggering
 - Decoupling profits from sales as an incentive for conservation programs





Per capita demand: water

Annual residential gallons sold per residential customer (NAWC)





Decoupling

- Adjustment, tracker, or rider that has the effect of a revenue cap so that reductions in sales are accompanied by a change in price and overall revenues are maintained
- May be used with performance incentives, including over-earnings penalties
- Information, analytical, and monitoring needs may be high
- Less controversy over demand forecasting; but more controversy over adjustments, risk, and return
- Undermines incentive-based rate design and demand-response methods
- Benefits to utilities are clearer than benefits to customers or environment





Integrated water management

- Watershed management perspectives
- Supply-side and demand-side management options
- Co-management of water and wastewater systems
- Water-energy nexus and interdependency
- Coordination of regulatory policies, planning, and incentives



Technical innovation in water

- Advanced filtration: ultra, micro, nano, and new media (e.g., silica)
- Desalination (energy intensive)
- Monitoring, testing, and laboratory methods
- Smart, joint, and prepaid metering
- Waterless and smart waste disposal
- Improved turf grass and xeriscape
- Recycling and reuse
- Decentralized water solutions
- Energy efficiency (equipment, load management)
- Joint water-energy management
- Remote sensors (SCADA) and telecommunications





Arguments against commission jurisdiction for non-private systems

- Cities can self-regulate
- Many municipal boards are very effective
- Profit motive (abuse of monopoly) is not a concern
- Unnecessary expense of regulation
- Unresponsiveness of regulators to local concerns
- Weaknesses in regulatory process



Arguments for expanding commission jurisdiction

- Recognition of market failure in the form of monopoly (regardless of ownership)
- Relative capacity and expertise of the commissions
- Regulatory methods and values (e.g., transparency)
- Accountability for rising costs and rates (with flat demand)
- Public confidence in processes, cost allocation, and rates
- Uniform accounting, auditing, reporting, and appeals processes
- Common performance, resource-management, service-quality standards
- Level playing field between public and private
- Economically efficient (cost-based) and equitable rates
- Reduced subsidies, arbitrary ratemaking, and unwillingness to charge
- Coordinated and reinforcing regulatory jurisdiction (quality, quantity, price)
- Less politicized infrastructure investment and ratemaking decisions



NARUC resolution: best practices (2005)

- Prospectively relevant test years
- Distribution system improvement charge
- Construction work in progress
- Pass-through adjustments
- Staff-assisted rate cases
- Consolidation to achieve scale economies
- Acquisition adjustments for consolidation, viability
- A streamlined ratemaking process
- Mediation and settlement
- Defined timeframes for rate cases
- Integrated water resource management
- Fair return on capital investment
- Improved communication with ratepayers and stakeholders





A cautionary note about “best practices”

- “Best practices” should be used with caution and reserve
 - ▶ Who decides?
 - ▶ Whose perspective (utilities, ratepayers, society)?
 - ▶ “Best” to some may not be to others
 - ▶ Even good practices can become obsolete
 - ▶ Practices evolve in dynamic environments
 - ▶ Innovation emerges through experimental method
- A “best practice” should be
 - ▶ Theoretically sound with proven efficacy
 - ▶ Field tested and widely adopted
 - ▶ Recognized by unbiased experts and practitioners
- Regulators should consider the totality of their practices
- Regulation cannot be “automated” – no substitute for reasoned judgment
- Some adaptive practices may alter or erode the regulatory compact



Can water be deregulated?

- Most of the water industry is not subject to economic regulation in the first place
- Technical, economic, and other barriers to “open access” limit network boundaries
- Privatization does not equal competition – the need for economic regulation remains
- Strong monopoly characteristics persist, even with “contestability” and “competitive” contracts
- Other market failures for water: public health, environmental protection, and equity
- Restructuring and reforms should take industry similarities and differences into account



Observations

- The regulatory process can be responsive and efficient and can also accommodate incentives, innovation, and change if well implemented
- Regulators must continue to be vigilant, particularly in the context of rising infrastructure, chemical, and energy costs for monopolistic water companies along with increasingly complex industry structures
- Regulation remains necessary as a “tough substitute” to guard against abuse of market power in the absence of competition
- Good companies can take good regulation.





Sourcebook of regulatory techniques (National Association of Water Companies)

- 01.0 Acquisition Treatment and Incentives
 - 02.0 Accounting and Financing
 - 03.0 Cost Recovery and Revenue Stability
 - 04.0 Cost Adjustments and Indexing
 - 05.0 Rate-Design Options
 - 06.0 Regulatory and Ratemaking Procedures
 - 07.0 Small System Methods
 - 08.0 Alternatives to Traditional Regulation
 - 09.0 Jurisdiction and Coordination
 - 10.0 General Water Industry Policies
 - 11.0 Miscellaneous Policies
 - 12.0 Resources and Publications
- Sourcebook Glossary
Indexes by Subject and by State

Available at www.nawc.org

Source: J. Beecher, IPU-MSU



Thanks for listening!



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