



Arkansas Capacity Development Strategy

For

New Public Water Systems

**Engineering Section
Arkansas Department of Health**

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Basis of Authority

What is the statutory basis for any regulations, policies, or other implementing authorities?

Act 96 of 1913 gives the Arkansas Department of Health (Department) the broad legal authority “to make all necessary and reasonable rules and regulations of a general nature for the protection of the public health.” The Department's Engineering Section (Section) has used this broad authority to implement the State’s Rules Pertaining to Public Water Systems, which contains specific requirements for all public water systems.

Describe the State’s regulations, policies, or other implementing authorities.

Section XX of the Rules Pertaining to Public Water Systems states:

“Before detailed plans and specifications are prepared for the construction of new public water systems or major improvements to existing public water systems, the owner or his authorized agent shall submit to the Arkansas Department of Health a preliminary report containing data and information sufficient for the complete understanding of the proposed work. The “Recommended Standards for Waterworks” by the Great Lakes – Upper Mississippi River Board of State Sanitary Engineers (Ten States Standards) is recommended as a guide. An inspection by Arkansas Department of Health staff of all proposed surface water and all groundwater source locations shall be conducted as part of the review of the preliminary report.

For proposed new Community Public Water Systems and Non-Transient Non-Community Public Water Systems the preliminary report shall include sufficient information to demonstrate the system’s technical, financial, and managerial capacity to comply with the requirements of the Safe Drinking Water Act (See Sec. VII. J.). The Department shall not approve the construction of any new Community Public Water System or Non-Transient Non-Community Public Water System unless the Department formally concurs that the report demonstrates the system’s technical, financial, and managerial capacity to comply with the requirements of the Safe Drinking Water Act.”

Section VII.I of the Rules Pertaining to Public Water Systems states:

“Each Community Public Water System and each Non-Transient Non-Community Public Water System shall have a written long-range plan. The long-range plan shall address, at a minimum, projected needs for source, treatment, storage and distribution for a planning period of at least ten years and shall demonstrate the system’s technical, financial, and managerial capacity to comply with the requirements of the Safe Drinking Water Act.”

The Section has recently updated guidelines for long-range plans. A copy of the Guidelines for Long-Range Plans, for both existing and new systems, is enclosed.

Section XXI of the Rules Pertaining to Public Water Systems states:

“The owner or his authorized agent shall submit two complete sets of engineering plans and specifications to, and receive written approval of, the Arkansas Department of Health, before constructing or entering into contract to construct a water system, source of supply, water

purification plant and/or distribution system, or any alteration thereto. Thereafter such engineering plans and specifications must be adhered to unless deviations are submitted to, and receive written approval of, the Arkansas Department of Health.”

Identify the State or sub-State agencies responsible for implementing the regulations, policies, or other activities.

The Engineering Section is the chief implementing agency for the Rules Pertaining to Public Water Systems. The Arkansas Department of Agriculture’s Natural Resources Division (NRD) provides as-needed assistance in financial/managerial reviews, especially in regard to evaluating the capacity of those systems seeking a loan from the Drinking Water State Revolving Loan Fund (DWSRF).

Describe the collaborative arrangements (if any) among the various agencies responsible for implementing these regulations, policies, or other authorities. Identify the means (e.g., memoranda of understanding) used to document the collaborative arrangements.

The Section has a verbal agreement with NRD to provide assistance in financial reviews on a limited as-needed basis. This agreement is supplemental to the signed “Interagency and Sub-Grant Agreement” between the Department and NRD for implementing activities for the DWSRF loan program.

Control Points

Describe each control point outlined in the State program and identify the agency responsible for implementing that control point. Make special note of the control point(s) that permit the State to directly exercise its authority to ensure the demonstration of capacity in new Community and NonTransient NonCommunity water systems.

There are two major control points for assessing new system capacity, both of which are imposed by the Section. The first is the requirement that a preliminary report be submitted, “Before detailed plans and specifications are prepared for the construction of new public water systems or major improvements to existing public water systems,” and that the report, as determined by the Section, contain, “data and information sufficient for the complete understanding of the proposed work.” This can be found in Section XX of the Rules Pertaining to Public Water Systems

The second major control point is that of requiring that engineering plans and specifications must be approved by the Section prior to construction of or entering into contract to construct a new water system. This can be found in Section XXI of the Rules Pertaining to Public Water Systems.

Either of the above control points permit the State to directly exercise, by the withholding of approval, its authority to ensure the demonstration of capacity in new Community and Non-Transient Non-Community water systems.

Existing systems that have recently become large enough to be classified as Community or Non-Transient Non-Community water systems are required to immediately submit As-Built Plans and Specifications (provided that none were previously submitted and approved or accepted for file). These plans and specifications are reviewed under the same criteria as those for systems being proposed. The Section then requires correction of any

significant deficiencies and field verification of such corrections by the design engineer. Once corrections have been verified to the satisfaction of the Section, the plans and specifications are then accepted for file. Such systems are activated as Community or Non-Transient Non-Community water systems as soon as they are discovered, and compliance grading, including appropriate enforcement actions, commences immediately.

It should also be noted that Section 17-51-201 of Act 333 of 1957 as Amended in 2003, also known as the Water Operator Licensing Law, states the following:

(a) In order to safeguard the public health, all operators of community and certain non-community public water systems, from which water is sold, distributed, or otherwise offered for human consumption, whether such water systems are publicly or privately owned and operated, shall be licensed and certified as competent by the department under the provisions of this chapter and under such rules and regulations as the board may adopt under the provisions of this chapter.

(b) It shall be unlawful for any person, municipality, political subdivision, corporation, partnership, sole proprietorship, or any authority that furnishes water for domestic consumption to operate any type of community public water system, non-transient non-community public water system, or any other non-community public water system utilizing a surface water or surface water influenced source, unless the operator in charge is duly licensed and certified competent by the Department of Health.

(c) It shall be unlawful for any person to perform the duties of an operator without being duly licensed or to falsely represent himself as a licensed operator.

(d) It shall also be unlawful for any public or private official, not duly licensed, to attempt to influence the judgement of a licensed operator in matters where the public health may be involved unless this official is an authorized representative of the Department of Health.

Compliance with the Water Operator Licensing Law is judged by district staff, primarily in the sanitary survey process. Sanitary surveys are performed at start-up of a new system, and periodically thereafter. Typically Sanitary surveys are performed once every two years for systems that have a surface water source, and once every three years for systems that have only ground water or purchased water sources.

Describe the aspect(s) of capacity (technical, managerial, or financial) evaluated at each of the control points listed above. Ensure that all aspects of capacity are evaluated.

Preliminary Reports – Preliminary report reviews, as described in the following paragraphs, address all three aspects of capacity.

The *Recommended Standards for Waterworks* by the Great Lakes – Upper Mississippi River Board of State Sanitary Engineers (also known as Ten States Standards) is recommended as a guide for preliminary reports.

An inspection by Arkansas Department of Health staff of all proposed surface water and groundwater source locations shall be conducted as part of the review of the preliminary report.

Referenced in Section XX of the Rules Pertaining to Public Water Systems regarding preliminary reports is Section VII.I of the Rules Pertaining to Public Water Systems, which requires water systems to have a long-range plan. As can be seen in the attached Guidelines for Long-Range Plans, all three aspects of capacity are covered.

The National Primary Drinking Water Standards are referenced in numerous places throughout the Rules Pertaining to Public Water Systems.

Plans and Specifications – Plan and specification reviews primarily address technical capacity. Design criteria for various aspects of a water system are described in general throughout the Rules Pertaining to Public Water Systems. These items include ground water sources, surface water sources, water treatment plants, potable water storage tanks, disinfection requirement, etc. In addition to the requirements described in general, standards from the American Waterworks Association (AWWA) are referenced as criteria for the following aspects of a water system: unit processes, equipment, chemicals, and appurtenances; construction of public water wells; design, inspection, repair and painting of potable water storage tanks; disinfection of potable water storage tanks; and the construction and testing of water distribution systems. Also, *Recommended Standards for Waterworks* is referred to as a guide.

At each of the control points listed above, what specific action will the State or sub-State agency take to ensure demonstration of technical, managerial, and financial capacity?

Evaluation of plans, specifications and preliminary reports occurs in the Section's normal review process.

The Section's normal review process consists of three layers, the district engineer, the engineer supervisor, and the chief engineer. The Section has eight district engineers, each responsible for a certain area of the state referred to as a district. The district engineer is responsible for the major portion of plan/specification/report review for the district. In addition, the technical support staff will review projects for Surface Water Treatment, Corrosion Control for Lead & Copper and Disinfection Byproduct Control in conjunction with the district engineer. If the documents under review do not meet the appropriate design criteria, comments are then provided by the district engineer, and the review process stops pending response to the comments. A minimal amount of technical assistance is provided in the descriptive element of the comments, but the onus is on the design engineer to make the appropriate changes.

The time frame for review by the district engineer is typically one to three weeks. If comments are provided, response to comments is expected within 45 days of receipt of comments. Once a reply to the comments is received by the Section, another one to three-week time frame is established, and the process starts again. Each time comments are provided, the review process is stopped until a response is received. Once the project appears ready for approval, it is forwarded to the engineer supervisor for concurrence and approval. If the project is considered a major alteration to an existing water system, or if the project is for a new water system, the engineer supervisor will then forward the project to the chief engineer for concurrence and approval.

Again, if the preliminary report, or the plans and specifications, do not demonstrate that a proposed system will be capable of meeting the requirements of the Safe Drinking Water Act upon start-up, the Section will provide comments, the review process will stop, and approval will be withheld. Upon response to the comments, the review process will proceed. If more comments are needed, they will continue to be issued until the Section is satisfied that adequate capacity has been demonstrated.

It is not the intent of the Section to provide assistance, other than what is normally provided through the provision and explanation of review comments, to proposed systems in order for a proposed system to obtain sufficient technical, managerial and financial capacities. That responsibility will fall upon the proposed water system.

If funding is being sought through any State agency, the preliminary report must also go to the Arkansas Water and Wastewater Advisory Committee (WWAC), which consists of representatives from the various funding and regulatory agencies, for review and comment.

Plan for Implementation and Periodic Review

How will the State evaluate the implementation and on-going effectiveness of its new system capacity development program?

The Section tracks the SDWA compliance of all Community and Non-Transient Non-Community water systems, and will pay close attention to new systems during their early years. The main tool that the Section will use to evaluate the effectiveness of its program will be compliance rates. If new system compliance rates are low, the Section will take note of what type of violations are occurring, make assessments of the causes of the violations, and take appropriate actions to address common causes. For example, if the assessment reveals that water systems are not being constructed according to the approved plans and specifications, follow-up activity on the part of the Section would be increased. Also, if deficiencies appear to be mainly in financial or managerial areas, the Section will investigate whether the water system merely did not provide managerial and financial capacity as shown in its submittals, or whether the managerial and financial review criteria should be changed.

Sanitary survey results will be used as an indicator of how effective the capacity development program is at ensuring that new systems will have adequate capacity upon start-up. As was stated earlier in this report, sanitary surveys will be performed at start-up of a new system, and periodically thereafter. Sanitary surveys are performed once every two years for systems that have a surface water source, and once every three years for systems that have only ground water or purchased water sources. Also, as stated earlier, adequacy of water operator licensure is evaluated in the sanitary survey process.

For systems that have recently commenced operation and have received funding from public funding agencies, the Section will maintain contact with the funding agencies regarding those systems' ability to repay their debts. If new systems are not consistently able to repay loans, or if funding agencies have found it necessary to significantly restructure the terms of multiple loans, based on new systems' inability to repay, the financial review criteria will be reevaluated.

Also, the Section uses the set-aside funds of its SRF capitalization grant for two technical service contracts. One of the contracts focuses mainly in technical and operational issues, and the other focuses mainly on financial and managerial issues. The contracts function primarily on a "circuit rider" format, with the contractor(s) evaluating systems, providing a strategy for addressing deficiencies, providing technical assistance, and lastly following up to verify that the systems are implementing improvements. The contractors are provided with a prioritized list, one for each contract, of systems that appear to need help in achieving and/or maintaining technical, managerial, or financial capacity. The lists are prioritized based on factors such as violations, presence/absence of a licensed operator, status with funding agencies, and category of system (surface, ground, purchase, surface influenced well, etc.).

Overall Program Functionality

How does the State's proposed program ensure that new systems commencing operations demonstrate technical, managerial, and financial capacity?

The State requires that new systems demonstrate technical, managerial, and financial capacity, by submitting a preliminary report to the Section for review and approval. Following approval of the preliminary report, engineering design plans and specifications must be submitted to the Section for review and approval prior to any construction activity.

Once a new system commences operation, compliance data will act as a measure by which the system is maintaining technical, managerial and financial capacity. If there is a negative trend in compliance data, the system will be inspected to determine what factors are contributing to this poor performance. The water system will then be required to take appropriate corrective actions to address any deficiencies found in the areas of technical, managerial and financial capacity.

As a result of ensuring that all new Community and Non-Transient Non-Community water systems demonstrate adequate technical, managerial and financial capacity, it is expected that there will be a reduction in the number of enforcement cases being pursued by the Section. The Section can then focus additional resources to assist existing systems that have a history of noncompliance. This effort will improve the state's compliance rate with State Federal drinking water regulations.

The State's operator certification program helps ensure that operators are properly trained, thus ensuring successful operation of the water systems, and compliance with State and Federal drinking water regulations.

The mission of the Arkansas Department of Health is to assure conditions which encourage a healthier quality of life for people in the state, by ensuring compliance with public health laws and regulations, providing leadership to help meet needs for disease prevention, community health assessment, health promotion, and service delivery, and by the development of sound public health policy for Arkansas. The implementation of the state's capacity development program will help achieve that mission by helping ensure the following things: that water systems will be able to meet the requirements of the Safe Drinking Water Act, that the citizens of the State of Arkansas will be the recipients of water that is safe to drink, and, since less time will be needed regulating systems in non-compliance, that taxpayer monies will be used more efficiently.

Appendix A

Guidelines for Long-Range Plans

Guidelines for Long-Range Plans Existing Public Water Systems

Under Section VII. I. of the Arkansas Rules Pertaining to Public Water Systems, each public water system shall have a written Long-Range Plan covering a planning period of at least ten years. This plan should be updated at least every 5 years. A Long-Range Plan shall address the following information at a minimum.

Items Pertaining to Technical Capacity:

1. A discussion of the water system's ability to consistently provide an ample quantity of safe drinking water to its customers, including such items as water use data, projected water use, current and future regulatory compliance, etc.
2. A description of the current state of the water system's assets
3. A description of the water system's required sustainable level of service
4. A description of which assets are critical to sustained performance
5. A description of all major projects and expansions anticipated within the planning period
6. A discussion and brief analysis of possible alternatives to the planned projects and expansions; including such items as interconnection with a neighboring system, purchased water arrangements, alternate ownership, and management arrangements
7. Hydraulic analyses of the distribution system at all pertinent flows and storage tank levels anticipated within the planning period
8. A discussion of source water adequacy, for both quality and quantity concerns, for the planning period
9. A discussion of the adequacy of source water protection areas and measures to control potential contaminants, including any applicable legal authority to implement such measures
10. A discussion of the current adequacy of water treatment processes and their projected performance and adequacy for the planning period
11. A discussion of how the water system plans to address any waste disposal issues occurring due to water treatment, (e.g., sludge, backwash water, etc.)
12. Documentation that the water system currently has a sufficient number of properly licensed operators, and plans that the water system has for maintaining a sufficient number of properly licensed operators for the planning period
13. A listing of any laboratory/water quality monitoring needs anticipated within the planning period
14. A discussion of the water system's planning efforts to ensure compliance with applicable state and federal regulations anticipated to be finalized within the planning period
15. A statement of compliance with section XIV.F of the Rules Pertaining to Public Water Systems regarding plumbing inspection and sewage disposal requirements, and a description of the system's legal authority to implement the requirements
16. A statement of compliance with section VII.E of the Rules Pertaining to Public Water Systems regarding the establishment of a cross-connection control program, and a description of the system's legal authority to implement the requirements
17. A discussion of deficiencies listed in the water system's sanitary survey that would result in major capital expenditures, and how those deficiencies will be addressed

18. Other items as appropriate for documenting and/or maintaining the water system's Technical Capacity.

Items Pertaining to Managerial Capacity:

1. A clear identification of the owner or other responsible legal body for the water system
2. A commitment from the owner or controlling body to adhere to and periodically review and update the Long-Range Plan
3. An organizational chart for the water system, showing all staff and their role in the organization. Also indicate any license or certification requirements of the positions
4. A discussion of any anticipated or on-going operator training and certification efforts.
5. A general operation and management plan for the water system, addressing such items as: routine inspections, planned equipment replacements, equipment calibration, emergency procedures, record keeping, reporting and similar activities
6. A discussion of the billing and collection procedure to address such items as: Is water use metered or estimated? If estimated, what is the basis for the estimate? If metered, who reads the meters? Are the meters tested periodically? What is the bill collection success rate? Please include any procedures in place to manage delinquent accounts. Are revenues collected sufficient for current and future operation of system?
7. An evaluation of unaccounted for water, and a discussion of plans to address any excessive losses
8. A listing of any standing O&M contract(s) and the relative responsibilities of the water system and contractor(s) relating to each contract
9. A statement of compliance with section VII.H of the Rules Pertaining to Public Water Systems regarding emergency planning, and a description of the system's legal authority to implement the requirements
10. A discussion of the adequacy of the spare parts inventory on hand for repairs
11. A discussion of the adequacy of the chemical supply inventory on hand
12. A discussion of the water system's existing safety program for chemical handling and other work area activities
13. Other items as appropriate for documenting and/or maintaining the water system's Managerial Capacity

Items Pertaining to Financial Capacity:

1. A forecast of all future capital needs and operating expenses to meet SDWA requirements, unregulated and/or emerging contaminants, infrastructure rehabilitation, and system expansion
2. A cash flow analysis to demonstrate revenue sufficiency
3. An operating budget to include such items as: depreciation, reserves, debt service, O&M, salaries, etc.
4. Other items as appropriate for documenting and/or maintaining the water system's Financial Capacity.

