The Texas Commission on Environmental Quality (commission) adopts amended §290.45 *with change* to the proposed text as published in the October 4, 2002 issue of the *Texas Register* (27 TexReg 9276).

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULE

Section 290.45 sets out the minimum production, pressurization, and storage capacity requirements for public drinking water systems. The requirements for systems using groundwater are different from those using surface water. Within those categories, the requirements vary depending on the size of the system. There can be instances where a public water system can provide adequate drinking water supplies at system capacity levels less than minimum levels prescribed in the rules. Conversely, there can also be instances where a public water system needs system capacities at levels greater than prescribed in the rules in order to provide adequate drinking water supplies.

Provisions for requesting an exception to minimum requirements are found in §290.39(l). Adopted in 1978, the section stipulates that requests are considered on a case-by-case basis. The commission can approve requests demonstrating that public health will not be compromised and that no degradation of service or water quality will result. These requests have been processed historically at the staff level, and in limited circumstances, revoked via staff letter notification.

In 1992, §290.45(g) was added to provide specific information to be addressed by a water system owner/operator requesting an exception to the minimum capacity requirements. Another revision, effective in May 2002, replaced the term “exception” with alternative capacity requirement in §290.45(g). The information includes daily production data (three years); data acquired in the last

drought period in the area; peak demand and actual demand data; unusual demand data (fire flows, major line breaks, etc.); and any other site/condition-specific information to support the request. To help evaluate the data submitted, staff developed guidance which has been in place since 1998.

Some public water system owner/operators desired clarification of the formal staff review protocol and expressed concern that the review process could be too long. Some public water system owner/operators have also expressed concern that some of the rules concerning minimum capacity requirements for wholesale water suppliers who also have retail connections are unclear and have led to inconsistent interpretations and application.

The adopted rulemaking is intended to address these concerns; clean up formatting and sentence structure; more explicitly state the conditions under which the executive director can establish capacity operating levels higher than the minimum requirements expressed in the rule; clarify minimum water system capacity requirements for wholesale water suppliers who also supply retail connections; clarify public water system and wholesaler responsibilities for meeting production requirements; specify the process for a public water system to request an alternative capacity requirement; specify exactly how an alternative capacity requirement is to be determined; and specify the process for review and revocation or revision of an alternative capacity requirement by the executive director.

SECTION DISCUSSION

The adopted amendment to §290.45, Minimum Water System Capacity Requirements, includes revisions throughout the section to clean up the rule so that sentence structure and format are consistent throughout the section and so that the rule conforms to *Texas Register* style guidelines. These types of changes include, but are not limited to, grammatical, acronym, and capitalization corrections and restructuring of sentences (without changing the meaning). Also throughout the section, the term "executive director" replaces the term "commission" for consistency with the definitions in 30 TAC Chapter 3. These types of changes will not be discussed any further in this preamble.

The adopted amendment to §290.45(a) reformats the subsection for improved readability and more explicitly state the conditions which may cause the executive director to establish capacity operating levels higher than the minimum requirements expressed in the rule. The existing rule states that the executive director will require additional supply, storage, service pumping, and pressure maintenance facilities if a normal operating pressure of 35 pounds per square inch (psi) cannot be maintained throughout the system, if the system's maximum daily demand exceeds its total production and treatment capacity, or if the system is unable to maintain a minimum pressure of 20 psi during fire fighting, line flushing, and other unusual conditions. The adopted new language adds that the executive director may also require additional capacity requirements using the method of calculation described in adopted §290.45(g)(2), if there are repeated customer complaints regarding inadequate pressure, or if the executive director receives a request for a capacity evaluation from customers of the system.

The adopted amendment to §290.45(c) revises the term "quantity requirement" to "capacity requirement" for consistency with other language throughout the section.

The adopted amendment to §290.45(d) revises the phrases "can supply" and "can meet" to "meets or exceeds" to more clearly state the requirement.

The adopted amendment to §290.45(e), regarding water wholesalers, clarifies minimum water system capacity requirements for wholesale water suppliers who also supply retail connections. The current language in subsection (e)(2) is deleted and replaced with language which states that for wholesale water suppliers, water system capacity requirements shall be determined by calculating the requirements based upon the number of retail customer service connections of that wholesale water supplier, if any, and adding that amount to the maximum amount of water obligated or pledged under all wholesale contracts.

The adopted amendment to §290.45(f)(4) clarifies that a uniform purchase rate identified in a purchase water contract will be acceptable in the absence of a daily purchase rate. This other category of purchase rate will be considered by the executive director when evaluating whether a public water system which purchases treated water from a wholesaler is meeting capacity requirements.

Adopted new §290.45(f)(6) clarifies that in a purchase water situation, the purchaser is responsible for meeting production requirements. The commission modified the language to further clarify that if additional capacity to meet increased demands cannot be obtained from the wholesaler through a new or

amended contract, the purchaser must obtain that capacity from other entities, from new wells, or surface water treatment facilities to meet requirements. However, when the purchase contract prohibits a purchaser from obtaining water from other sources, the responsibility for meeting production requirements passes to the wholesaler. Existing subsection (f)(6) is renumbered as subsection (f)(7).

The adopted amendment to §290.45(g), regarding alternative capacity requirements, deletes the reference to §290.39(1) as unnecessary because the rule only needs to state that the system must demonstrate that approval of an alternative capacity requirement will not compromise public health or result in the degradation of service or water quality. New language is also adopted in subsection (g) to state that alternative capacity requirements are unavailable for groundwater systems serving fewer than 50 connections without total storage as specified in §290.45(b)(1), or for noncommunity water systems as specified in §290.45(c) and (d). Water systems without storage are excluded because they must rely on the well production capacity alone to meet instantaneous system demands. Water systems without storage lack the buffering capacity to meet peak system demands which storage and service pumps provide by their ability to store water during periods of lower usage for withdrawal during periods in which the system demand exceeds total production capacity. Alternative capacity requirements are unavailable for noncommunity water systems because these systems are not required to record and maintain the water usage data necessary for evaluating the appropriateness of an alternative capacity requirement.

The adopted amendment to subsection (g)(1)(D) deletes the existing language and adds new language to clarify the type of data required. The request must include the actual number of active connections for each month during the three years of production data.

The adopted amendment to subsection (g)(1)(F) replaces the general requirement that an alternative capacity requirement provide an equivalent level of service with a more specific numerical pressure standard of 35 psi under normal operating conditions with a minimum of 20 psi during fire flows or line breaks, which is an existing requirement of §290.46(r).

Adopted new §290.45(g)(1)(G) requires that all data relied upon in making a proposal be submitted with the request for an alternative capacity requirement.

Adopted new subsection (g)(2) specifies that alternative capacity requirements for existing public water systems must be based on the maximum daily demand for the system, unless the request is submitted by a licensed professional engineer in accordance with the requirements of subsection (g)(3). The maximum daily demand must be determined from daily usage data contained in monthly operating reports for the system during a 36 consecutive month period. The 36 consecutive month period must end within 90 days of the date of submission to ensure the data is as current as possible.

Adopted new subparagraphs (A) - (C) of subsection (g)(2) formalize existing staff review procedure by specifying the computations involved in determining maximum daily demand, calculating an equivalency ratio, and establishing an alternative capacity requirement. New paragraph (2)(A) defines

the maximum daily demand as the greatest number of gallons, including groundwater, surface water, and purchased water delivered by the system during any single day during the review period. Days having unusual demands such as fire flows or major main breaks are not considered when establishing the maximum daily demand. New paragraph (2)(B) defines an equivalency ratio as the maximum daily demand expressed in gallons per minute (gpm) per connection multiplied by a safety factor and divided by 0.6 gpm per connection. The safety factor is 1.15 unless it is documented that the existing system capacity will be adequate for the next five years, in which case the safety factor may be reduced to 1.05. New paragraph (2)(C) specifies that alternative capacity requirements must be calculated by multiplying the equivalency ratio by the appropriate minimum capacity requirements specified in §290.45(b). As an example, a groundwater system with 200 connections and an actual maximum daily demand of 0.36 gpm per connection would have a calculated equivalency ratio of 0.69, which would produce the following alternative capacity requirements: well capacity, 0.41 gpm per connection; total storage capacity, 138 gallons per connection; total service pumping capacity, 1.38 gpm per connection; and pressure tank capacity, 13.8 gallons per connection. Standard rounding methods are used to round calculated alternative capacity requirement values to the nearest one-hundredth. In the example given, the calculated well capacity of 0.414 gpm per connection is rounded to 0.41 gpm per connection.

Adopted new subsection (g)(3) establishes the additional requirements for proposed alternative capacity requirements which are submitted by licensed professional engineers in paragraph (3)(A) and (B). Adopted new paragraph (3)(A) requires that licensed professional engineers sign and seal their requests certifying that the alternative capacity requirements have been established in accordance with §290.45(g). Adopted new paragraph (3)(B) allows the substitution of data from a comparable water

system if the water system is new or if at least 36 consecutive months of data is not available. The engineer is required to certify that the system is comparable in terms of prevailing land use patterns (rural versus urban); number of connections; density of service populations; fire flow obligations; and socio-economic, climatic, geographic, and topographic considerations, and other factors as may be relevant. The comparable system shall not exhibit any of the conditions listed in adopted §290.45(g)(6)(A), such as pressure below 35 psi, water outages due to high use, mandatory water rationing, failure to meet a minimum capacity requirement, or changes in water supply conditions or usage patterns which create a potential threat to public health.

Adopted new subsection (g)(4) provides the criteria which will be used in considering requests for alternative capacity requirements. Adopted new paragraph (4)(A) states that, for requests submitted by a licensed professional engineer, the alternative capacity requirements submitted by the engineer will automatically become effective if the executive director fails to provide written acceptance or denial within 90 days from the date the request was submitted. Automatic approval is adopted only for requests for alternative capacity requirements submitted and certified by a licensed professional engineer. Because a licensed professional engineer is required to certify that the proposed alternative capacity requirements meet the requirements in §290.45(g), staff should be able to review these requests within 90 days. Whereas, a request submitted by a non-engineer may take more review time because the majority of these requests only provide data and ask for a staff determination of an appropriate alternative capacity requirement.

Adopted new paragraph (4)(B) specifies the executive director's responsibilities should a request for an alternative capacity requirement be denied. The executive director shall identify the reasons for denial and allow 45 days for the public water system to respond to the denial. If no response is received within 45 days, the denial is final. If a response is received within 45 days, the executive director shall have 60 days from the receipt of the response to mail a final written approval or denial of the request.

Existing subsection (g)(2) is renumbered as subsection (g)(5) and amended to clarify that special conditions apply to systems qualifying for an elevated storage alternative capacity requirement.

Existing subsection (g)(3) is renumbered as (g)(6) and amended to establish a process for review and revocation or revision of an alternative capacity requirement by the executive director. Although a review process has been in place, it was not specified in the rule. This revised subsection lists conditions which may constitute grounds for revocation or revision of an alternative capacity requirement and defines the review process.

Adopted new paragraph (6)(A) specifies the conditions which may constitute grounds for revocation or revision of an alternative capacity requirement. The conditions include documented pressure below 35 psi at any time not related to line repair, except during fire fighting, when it cannot be less than 20 psi; water outages due to high water usage; mandatory water rationing due to high customer demand or over-taxed water production or supply facilities; failure to meet a minimum capacity requirement or an established alternative capacity requirement; changes in water supply conditions or usage patterns which create a potential threat to public health; or any other condition where the executive director finds that

the alternative capacity requirement has compromised the public health or resulted in a degradation of service or water quality.

Adopted new paragraph (6)(B) outlines the process for revocation or revision of an alternative capacity requirement. The executive director must mail the public drinking water system written notice of the executive director's intent to revoke or revise an alternative capacity requirement identifying the specific reason(s) for the proposed action. The public water system has 30 days from the date the written notice is mailed to respond to the proposed action. The public water system also has 30 days from the date the written notice is mailed to request a meeting with the agency's public drinking water program personnel to review the proposal. If requested, such a meeting must occur within 45 days of the date the written notice is mailed. After considering any response from or after any requested meeting with the public drinking water system, the executive director must mail written notification to the public drinking water system of the final decision to continue, revoke, or revise an alternative capacity requirement identifying the specific reason(s) for the decision.

Adopted new paragraph (6)(C) states that if the executive director finds that failure of the service or other threat to public health and safety is imminent, the executive director may issue written notification of the decision to revoke or revise an alternative capacity requirement at any time, without following the process in adopted paragraph (6)(A), in order to assure protection of public health and safety.

FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking is not subject to §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in that statute. A "major environmental rule" means a rule, the specific intent of which, is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The intent of the adopted rule is primarily to clarify certain provisions regarding public water systems which purchase treated water to meet all or part of the minimum capacity requirements, to provide an alternative method based upon actual system demand for meeting the minimum capacity requirements, to formalize an existing staff review process for proposed alternative capacity requirements, and to specify the process for review and revocation or revision of an alternative capacity requirement by the executive director. Furthermore, the rulemaking does not meet any of the four applicability requirements listed in §2001.0225(a). Specifically, the adopted rule does not exceed a federal standard because no applicable federal standards exist. The adopted rule does not exceed an express requirement of state law nor exceed a requirement of a delegation agreement. The adopted rule was not developed solely under the general powers of the agency, but also under the specific authority of Texas Health and Safety Code (THSC), §341.0315, which requires the commission to ensure that public drinking water supply systems provide an adequate and safe drinking water supply. The commission invited public comment on the draft regulatory impact analysis determination, and no comments on this issue were received.

TAKINGS IMPACT ASSESSMENT

The commission evaluated the adopted rule and performed an assessment of whether it constitutes a taking under Texas Government Code, Chapter 2007. The purpose of this rulemaking is to provide an alternative method based upon actual system demand for meeting the minimum capacity requirements. The adopted amendment formalizes an existing staff review process for proposed alternative capacity requirements and specify the process for review and revocation or revision of an alternative capacity requirement by the executive director. The adopted amendment also clarifies existing provisions regarding the minimum capacity requirements for public water systems which purchase treated water. Promulgation and enforcement of the amendment will constitute neither a statutory nor a constitutional taking of private real property. This rulemaking will impose no burdens on private real property because the adopted rule neither relates to, nor has any impact on the use or enjoyment of private real property, and there is no reduction in value of the property as a result of this rulemaking.

CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed the adopted rulemaking and found that the rule is neither identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11, nor will it affect any action/authorization identified in §505.11. Therefore, the adopted rule is not subject to the Texas Coastal Management Program.

PUBLIC COMMENT

The comment period closed at 5:00 p.m. on November 4, 2002. The commission did not hold a public hearing regarding this rule. The commission received timely written comments from the City of

Henrietta, the City of Princeton, the Gastonia-Scurry Water Supply Corporation, the North Texas Municipal Water District (NTMWD), the Texas Rural Water Association (TRWA) and the Texas Water Conservation Association (TWCA).

No commenter generally opposed the proposal. The City of Henrietta, the Gastonia-Scurry Water Supply Corporation, the NTMWD, the TRWA, and the TWCA supported the proposal. The City of Princeton suggested changes to the proposed rule as described in the RESPONSE TO COMMENTS section of this preamble.

RESPONSE TO COMMENTS

The City of Henrietta commented that the city strongly supports the amendment to §290.45 and appreciates the work of the commission and staff.

The commission appreciates the comment in support of the rule and staff.

The Gastonia-Scurry Water Supply Corporation commented that it supports amending §290.45.

The commission appreciates the comment in support of the rule.

NTMWD, TRWA, and TWCA commented that they strongly support the proposal to amend §290.45.

The commission appreciates the comments in support of the rule.

The City of Princeton commented that proposed new subsection (f)(6) may be subject to different interpretations and suggested rewriting the subsection to avoid any possible misinterpretations. Proposed new (f)(6) requires that the purchaser is responsible for meeting all production requirements and that if additional capacity to meet increased demands is *unavailable* from the wholesaler, additional capacity must be obtained from water purchase contracts with other entities, new wells, or surface water treatment facilities. The City of Princeton commented that by using the word "unavailable" purchasers may interpret this sentence to require additional service from the wholesaler unless the wholesaler can demonstrate that it has no available additional water and suggested to avoid any ambiguity that the commission rewrite the sentence to read: "If additional capacity to meet increased demands is not provided by the wholesaler, additional capacity must be obtained from water purchase contracts with other entities, new wells, or surface water treatment facilities."

The commission acknowledges the commenter's concern that the language in the proposed rule could be misinterpreted. To clarify the proposed rule, the commission changed the language in (f)(6) to read: "The purchaser is responsible for meeting all production requirements. If additional capacity to meet increased demands *cannot be attained from the wholesaler through a new or amended contract*, additional capacity must be obtained from water purchase contracts with other entities, new wells, or surface water treatment facilities. However, if the water purchase contract prohibits the purchaser from securing water from sources other than the wholesaler, the wholesaler is responsible for meeting all production requirements." This italicized change specifically identifies that the purchaser is responsible for meeting the production

requirements, unless the purchase water contract prohibits securing water from sources other than the wholesaler.

SUBCHAPTER D: RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS

§290.45

STATUTORY AUTHORITY

The amendment is adopted under the authority of Texas Water Code, §5.103, which provides the commission the authority to adopt any rules necessary to carry out its powers and duties under the laws of Texas; and under THSC, §341.0315, which requires the commission to ensure that public drinking water supply systems provide an adequate and safe drinking water supply.

§290.45. Minimum Water System Capacity Requirements.

(a) General provisions.

(1) The requirements in this section are to be used in evaluating both the total capacities for public water systems and the capacities at individual pump stations and pressure planes. The capacities listed in this section are minimum requirements only.

(2) The executive director will require additional supply, storage, service pumping, and pressure maintenance facilities if a normal operating pressure of 35 pounds per square inch (psi) cannot be maintained throughout the system, or if the system's maximum daily demand exceeds its total production and treatment capacity. The executive director will also require additional capacities if the

system is unable to maintain a minimum pressure of 20 psi during fire fighting, line flushing, and other unusual conditions.

(3) The executive director may establish additional capacity requirements for a public water system using the method of calculation described in subsection (g)(2) of this section if there are repeated customer complaints regarding inadequate pressure or if the executive director receives a request for a capacity evaluation from customers of the system.

(4) Throughout this section, total storage capacity does not include pressure tank capacity.

(b) Community water systems.

(1) Groundwater supplies must meet the following requirements.

(A) If fewer than 50 connections without ground storage, the system must meet the following requirements:

(i) a well capacity of 1.5 gallons per minute (gpm) per connection; and

(ii) a pressure tank capacity of 50 gallons per connection;

(B) If fewer than 50 connections with ground storage, the system must meet the following requirements:

(i) a well capacity of 0.6 gpm per connection;

(ii) a total storage capacity of 200 gallons per connection;

(iii) two or more service pumps having a total capacity of 2.0 gpm per connection; and

(iv) a pressure tank capacity of 20 gallons per connection.

(C) For 50 to 250 connections, the system must meet the following requirements:

(i) a well capacity of 0.6 gpm per connection;

(ii) a total storage capacity of 200 gallons per connection;

(iii) two or more pumps having a total capacity of 2.0 gpm per connection at each pump station or pressure plane. For systems which provide an elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6

gpm per connection are required at each pump station or pressure plane. If only wells and elevated storage are provided, service pumps are not required; and

(iv) an elevated storage capacity of 100 gallons per connection or a pressure tank capacity of 20 gallons per connection.

(D) For more than 250 connections, the system must meet the following requirements:

(i) two or more wells having a total capacity of 0.6 gpm per connection. Where an interconnection is provided with another acceptable water system capable of supplying at least 0.35 gpm for each connection in the combined system under emergency conditions, an additional well will not be required as long as the 0.6 gpm per connection requirement is met for each system on an individual basis. Each water system must still meet the storage and pressure maintenance requirements on an individual basis unless the interconnection is permanently open. In this case, the systems' capacities will be rated as though a single system existed;

(ii) a total storage capacity of 200 gallons per connection;

(iii) two or more pumps that have a total capacity of 2.0 gpm per connection or that have a total capacity of at least 1,000 gpm and the ability to meet peak hourly demands with the largest pump out of service, whichever is less, at each pump station or pressure

plane. For systems which provide an elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required at each pump station or pressure plane. If only wells and elevated storage are provided, service pumps are not required;

(iv) an elevated storage capacity of 100 gallons per connection or a pressure tank capacity of 20 gallons per connection. If pressure tanks are used, a maximum capacity of 30,000 gallons is sufficient for up to 2,500 connections. An elevated storage capacity of 100 gallons per connection is required for systems with more than 2,500 connections. Alternate methods of pressure maintenance may be proposed and will be approved if the criteria contained in subsection (g)(5) of this section are met; and

(v) emergency power for systems which serve more than 250 connections and do not meet the elevated storage requirement. Sufficient emergency power must be provided to deliver a minimum of 0.35 gpm per connection to the distribution system in the event of the loss of normal power supply. Alternately, an emergency interconnection can be provided with another public water system that has emergency power and is able to supply at least 0.35 gpm for each connection in the combined system. Emergency power facilities in systems serving 1,000 connections or greater must be serviced and maintained in accordance with level 2 maintenance requirements contained in the current National Fire Protection Association (NFPA) 110 standards. Although not required, compliance with NFPA 110 standards is highly recommended for systems serving less than 1,000 connections. Logs of all emergency power use and maintenance must be maintained and kept on

file for a period of not less than three years. These records must be made available, upon request, for executive director review.

(E) Mobile home parks with a density of eight or more units per acre and apartment complexes which supply fewer than 100 connections without ground storage must meet the following requirements:

(i) a well capacity of 1.0 gpm per connection; and

(ii) a pressure tank capacity of 50 gallons per connection with a maximum of 2,500 gallons required.

(F) Mobile home parks and apartment complexes which supply 100 connections or greater, or fewer than 100 connections and utilize ground storage must meet the following requirements:

(i) a well capacity of 0.6 gpm per connection. Systems with 250 or more connections must have either two wells or an approved interconnection which is capable of supplying at least 0.35 gpm for each connection in the combined system;

(ii) a total storage of 200 gallons per connection;

(iii) at least two service pumps with a total capacity of 2.0 gpm per connection; and

(iv) a pressure tank capacity of 20 gallons per connection.

(2) Surface water supplies must meet the following requirements:

(A) a raw water pump capacity of 0.6 gpm per connection with the largest pump out of service;

(B) a treatment plant capacity of 0.6 gpm per connection under normal rated design flow;

(C) transfer pumps (where applicable) with a capacity of 0.6 gpm per connection with the largest pump out of service;

(D) a covered clearwell storage capacity at the treatment plant of 50 gallons per connection or, for systems serving more than 250 connections, 5.0% of daily plant capacity;

(E) a total storage capacity of 200 gallons per connection;

(F) a service pump capacity that provides each pump station or pressure plane with two or more pumps that have a total capacity of 2.0 gpm per connection or that have a total capacity of at least 1,000 gpm and the ability to meet peak hourly demands with the largest pump out of service, whichever is less. For systems which provide an elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required at each pump station or pressure plane;

(G) an elevated storage capacity of 100 gallons per connection or a pressure tank capacity of 20 gallons per connection. If pressure tanks are used, a maximum capacity of 30,000 gallons is sufficient for systems of up to 2,500 connections. An elevated storage capacity of 100 gallons per connection is required for systems with more than 2,500 connections. Alternate methods of pressure maintenance may be proposed and will be approved if the criteria contained in subsection (g)(5) of this section are met; and

(H) emergency power for systems which serve more than 250 connections and do not meet the elevated storage requirement. Sufficient emergency power must be provided to deliver a minimum of 0.35 gpm per connection to the distribution system in the event of the loss of normal power supply. Alternately, an emergency interconnection can be provided with another public water system that has emergency power and is able to supply at least 0.35 gpm for each connection in the combined system. Emergency power facilities in systems serving 1,000 connections or greater must be serviced and maintained in accordance with level 2 maintenance requirements contained in the current NFPA 110 standards. Although not required, compliance with NFPA 110 standards is highly

recommended for systems serving less than 1,000 connections. Logs of all emergency power use and maintenance must be maintained and kept on file for a period of not less than three years. These records must be made available, upon request, for executive director review.

(c) Noncommunity water systems serving transient accommodation units. The following water capacity requirements apply to noncommunity water systems serving accommodation units such as hotel rooms, motel rooms, travel trailer spaces, campsites, and similar accommodations.

(1) Groundwater supplies must meet the following requirements.

(A) If fewer than 100 accommodation units without ground storage, the system must meet the following requirements:

(i) a well capacity of 1.0 gpm per unit; and

(ii) a pressure tank capacity of ten gallons per unit with a minimum of 220 gallons.

(B) For systems serving fewer than 100 accommodation units with ground storage or serving 100 or more accommodation units, the system must meet the following requirements:

(i) a well capacity of 0.6 gpm per unit;

(ii) a ground storage capacity of 35 gpm;

(iii) two or more service pumps which have a total capacity of 1.0 gpm per unit; and

(iv) a pressure tank capacity of ten gallons per unit.

(2) Surface water supplies, regardless of size, must meet the following requirements:

(A) a raw water pump capacity of 0.6 gpm per unit with the largest pump out of service;

(B) a treatment plant capacity of 0.6 gpm per unit;

(C) a transfer pump capacity (where applicable) of 0.6 gpm per unit with the largest pump out of service;

(D) a ground storage capacity of 35 gallons per unit with a minimum of 1,000 gallons as clearwell capacity;

(E) two or more service pumps with a total capacity of 1.0 gpm per unit; and

(F) a pressure tank capacity of ten gallons per unit with a minimum requirement of 220 gallons.

(d) Noncommunity water systems serving other than transient accommodation units.

(1) The following table is applicable to paragraphs (2) and (3) of this subsection and shall be used to determine the maximum daily demand for the various types of facilities listed.

Figure: 30 TAC §290.45(d)(1)

Table A

Type of Establishment	Gallons/Person
Restaurants	18
Schools without cafeterias, gymnasiums, or showers	18
Schools with cafeterias, but no gymnasiums or showers	24
Schools with cafeterias, gymnasiums, and showers	30
Youth camps without flush toilets, showers, or dining halls	6
Youth camps with flush toilets, but no showers or dining halls	24
Youth camps with flush toilets, showers, and dining halls	42
Office buildings	18
Hospitals (based on number of beds)	720
Institutions, other than hospitals	240
Factories (exclusive of industrial processes)	24
Parks	6
Swimming pools	12
Country clubs	120
Airports (per passenger)	6
Self-service laundries	60
Service stations/stores	12

It should be noted that this table is used to determine minimum capacities only and that the overriding criteria will be the ability of the system to maintain a minimum pressure of 35 psi under normal operating conditions. Minimum distribution pressure shall not be less than 20 psi at any time.

(2) Groundwater supplies must meet the following requirements.

(A) If fewer than 300 persons per day are served, the system must meet the following requirements:

(i) a well capacity which meets or exceeds the maximum daily demand of the system during the hours of operation; and

(ii) a minimum pressure tank capacity of 220 gallons with additional capacity, if necessary, based on a sanitary survey conducted by the executive director.

(B) If 300 or more persons per day are served, the system must meet the following requirements:

(i) a well capacity which meets or exceeds the maximum daily demand;

(ii) a ground storage capacity which is equal to 50% of the maximum daily demand;

(iii) if the maximum daily demand is less than 15 gpm, at least one service pump with a capacity of three times the maximum daily demand;

(iv) if the maximum daily demand is 15 gpm or more, at least two service pumps with a total capacity of three times the maximum daily demand; and

(v) a minimum pressure tank capacity of 220 gallons with additional capacity, if necessary, based on a sanitary survey conducted by the executive director.

(3) Each surface water supply or groundwater supply that is under the direct influence of surface water, regardless of size, must meet the following requirements:

(A) a raw water pump capacity which meets or exceeds the maximum daily demand of the system with the largest pump out of service;

(B) a treatment plant capacity which meets or exceeds the system's maximum daily demand;

(C) a transfer pump capacity (where applicable) sufficient to meet the maximum daily demand with the largest pump out of service;

(D) a clearwell capacity which is equal to 50% of the maximum daily demand;

(E) two or more service pumps with a total capacity of three times the maximum daily demand; and

(F) a minimum pressure tank capacity of 220 gallons with additional capacity, if necessary, based on a sanitary survey conducted by the executive director.

(e) Water wholesalers. The following additional requirements apply to systems which supply wholesale treated water to other public water supplies.

(1) All wholesalers must provide enough production, treatment, and service pumping capacity to meet or exceed the combined maximum daily commitments specified in their various contractual obligations.

(2) For wholesale water suppliers, minimum water system capacity requirements shall be determined by calculating the requirements based upon the number of retail customer service connections of that wholesale water supplier, if any, and adding that amount to the maximum amount of water obligated or pledged under all wholesale contracts.

(3) Emergency power is required for each portion of the system which supplies more than 250 connections under direct pressure and does not provide an elevated storage capacity of at least 100 gallons per connection. If emergency power is required, it must be sufficient to deliver 20% of the minimum required service pump capacity in the event of the loss of normal power supply. When the

wholesaler provides water through an air gap into the purchaser's storage facilities it will be the purchaser's responsibility to meet all minimum water system capacity requirements including emergency power.

(f) Purchased water systems. The following requirements apply only to systems which purchase treated water to meet all or part of their production, storage, service pump, or pressure maintenance capacity requirements.

(1) The water purchase contract must be available to the executive director in order that production, storage, service pump, or pressure maintenance capacity may be properly evaluated. For purposes of this section, a contract may be defined as a signed written document of specific terms agreeable to the water purchaser and the water wholesaler, or in its absence, a memorandum or letter of understanding between the water purchaser and the water wholesaler.

(2) The contract shall authorize the purchase of enough water to meet the monthly or annual needs of the purchaser.

(3) The contract shall also establish the maximum rate at which water may be drafted on a daily and hourly basis. In the absence of specific maximum daily or maximum hourly rates in the contract, a uniform purchase rate for the contract period will be used.

(4) The maximum authorized daily purchase rate specified in the contract, or a uniform purchase rate in the absence of a specified daily purchase rate, plus the actual production capacity of the system must be at least 0.6 gpm per connection.

(5) For systems which purchase water under direct pressure, the maximum hourly purchase authorized by the contract plus the actual service pump capacity of the system must be at least 2.0 gpm per connection or provide at least 1,000 gpm and be able to meet peak hourly demands, whichever is less.

(6) The purchaser is responsible for meeting all production requirements. If additional capacity to meet increased demands cannot be attained from the wholesaler through a new or amended contract, additional capacity must be obtained from water purchase contracts with other entities, new wells, or surface water treatment facilities. However, if the water purchase contract prohibits the purchaser from securing water from sources other than the wholesaler, the wholesaler is responsible for meeting all production requirements.

(7) All other minimum capacity requirements specified in this section shall apply.

(g) Alternative capacity requirements. Public water systems may request approval to meet alternative capacity requirements in lieu of the minimum capacity requirements specified in this section. Any water system requesting to use an alternative capacity requirement must demonstrate to the satisfaction of the executive director that approving the request will not compromise the public health or

result in a degradation of service or water quality. Alternative capacity requirements are unavailable for groundwater systems serving fewer than 50 connections without total storage as specified in subsection (b)(1) of this section or for noncommunity water systems as specified in subsections (c) and (d) of this section.

(1) Alternative capacity requirements for public water systems may be granted upon request to and approval by the executive director. The request to use an alternative capacity requirement must include:

(A) a detailed inventory of the major production, pressurization, and storage facilities utilized by the system;

(B) records kept by the water system that document the daily production of the system. The period reviewed shall not be less than three years. The applicant may not use a calculated peak daily demand;

(C) data acquired during the last drought period in the region, if required by the executive director;

(D) the actual number of active connections for each month during the three years of production data;

(E) description of any unusual demands on the system such as fire flows or major main breaks that will invalidate unusual peak demands experienced in the study period;

(F) any other relevant data needed to determine that the proposed alternative capacity requirement will provide at least 35 psi in the public water system except during line repair or during fire fighting when it cannot be less than 20 psi; and

(G) a copy of all data relied upon for making the proposed determination.

(2) Alternative capacity requirements for existing public water systems must be based upon the maximum daily demand for the system, unless the request is submitted by a licensed professional engineer in accordance with the requirements of paragraph (3) of this subsection. The maximum daily demand must be determined based upon the daily usage data contained in monthly operating reports for the system during a 36 consecutive month period. The 36 consecutive month period must end within 90 days of the date of submission to ensure the data is as current as possible.

(A) Maximum daily demand is the greatest number of gallons, including groundwater, surface water, and purchased water delivered by the system during any single day during the review period. Maximum daily demand excludes unusual demands on the system such as fire flows or major main breaks.

(B) For the purpose of calculating alternative capacity requirements, an equivalency ratio must be established. This equivalency ratio must be calculated by multiplying the maximum daily demand, expressed in gpm per connection, by a fixed safety factor and dividing the result by 0.6 gpm per connection. The safety factor shall be 1.15 unless it is documented that the existing system capacity is adequate for the next five years. In this case, the safety factor may be reduced to 1.05. The conditions in §291.93(3) of this title (relating to Adequacy of Water Utility Service) concerning the 85% rule shall continue to apply to public water systems that are also retail public utilities.

(C) To calculate the alternative capacity requirements, the equivalency ratio must be multiplied by the appropriate minimum capacity requirements specified in subsection (b) of this section. Standard rounding methods are used to round calculated alternative production capacity requirement values to the nearest one-hundredth.

(3) Alternative capacity requirements which are proposed and submitted by licensed professional engineers for review are subject to the following additional requirements.

(A) A signed and sealed statement by the licensed professional engineer must be provided which certifies that the proposed alternative capacity requirements have been determined in accordance with the requirements of this subsection.

(B) If the system is new or at least 36 consecutive months of data is not available, maximum daily demand may be based upon at least 36 consecutive months of data from a comparable public water system. A licensed professional engineer must certify that the data from another public water system is comparable based on consideration of the following factors: prevailing land use patterns (rural versus urban); number of connections; density of service populations; fire flow obligations; and socio-economic, climatic, geographic, and topographic considerations as well as other factors as may be relevant. The comparable public water system shall not exhibit any of the conditions listed in paragraph (6)(A) of this subsection.

(4) The executive director shall consider requests for alternative capacity requirements in accordance with the following requirements.

(A) For those requests submitted under the seal of a licensed professional engineer, the executive director must mail written acceptance or denial of the proposed alternative capacity requirements to the public water system within 90 days from the date of submission. If the executive director fails to mail written notification within 90 days, the alternative capacity requirements submitted by a licensed professional engineer automatically become the alternative capacity requirements for the public water system.

(B) If the executive director denies the request:

(i) the executive director shall mail written notice to the public water system identifying the specific reason or reasons for denial and allow 45 days for the public water system to respond to the reason(s) for denial;

(ii) the denial is final if no response from the public water system is received within 45 days of the written notice being mailed; and

(iii) the executive director must mail a final written approval or denial within 60 days from the receipt of any response timely submitted by the public water system.

(5) Although elevated storage is the preferred method of pressure maintenance for systems of over 2500 connections, it is recognized that local conditions may dictate the use of alternate methods utilizing hydropneumatic tanks and on-site emergency power equipment. Alternative capacity requirements to the elevated storage requirements may be obtained based on request to and approval by the executive director. Special conditions apply to systems qualifying for an elevated storage alternative capacity requirement.

(A) The system must submit documentation sufficient to assure that the alternate method of pressure maintenance is capable of providing a safe and uninterrupted supply of water under pressure to the distribution system during all demand conditions.

(i) A signed and sealed statement by a licensed professional engineer must be provided which certifies that the pressure maintenance facilities are sized, designed, and capable of providing a minimum pressure of at least 35 psi at all points within the distribution network at flow rates of 1.5 gpm per connection or greater. In addition, the engineer must certify that the emergency power facilities are capable of providing the greater of the average daily demand or 0.35 gpm per connection while maintaining distribution pressures of at least 35 psi, and that emergency power facilities powering production and treatment facilities are capable of supplying at least 0.35 gpm per connection to storage.

(ii) The system's licensed professional engineer must conduct a hydraulic analysis of the system under peak conditions. This must include an analysis of the time lag between the loss of the normal power supply and the commencement of emergency power as well as the minimum pressure that will be maintained within the distribution system during this time lag. In no case shall this minimum pressure within the distribution system be less than 20 psi. The results of this analysis must be submitted to the executive director for review.

(iii) For existing systems, the system's licensed professional engineer must provide continuous pressure chart recordings of distribution pressures maintained during past power failures, if available. The period reviewed shall not be less than three years.

(B) Emergency power facilities must be maintained and provided with necessary appurtenances to assure immediate and dependable operation in case of normal power interruption.

(i) The facilities must be serviced and maintained in accordance with level 2 maintenance requirements contained in the current NFPA 110 standards and the manufacturers' recommendations.

(ii) The switching gear must be capable of bringing the emergency power generating equipment on-line during a power interruption such that the pressure in the distribution network does not fall below 20 psi at any time.

(iii) The minimum on-site fuel storage capacity shall be determined by the fuel demand of the emergency power facilities and the frequency of fuel delivery. An amount of fuel equal to that required to operate the facilities under-load for a period of at least eight hours must always be maintained on site.

(iv) Residential rated mufflers or other means of effective noise suppression must be provided on each emergency power motor.

(C) Battery powered or uninterrupted power supply pressure monitors and chart recorders which are configured to activate immediately upon loss of normal power must be

provided for pressure maintenance facilities. These records must be kept for a minimum of three years and made available for review by the executive director. Records must include chart recordings of all power interruptions including interruptions due to periodic emergency power under-load testing and maintenance.

(D) An emergency response plan must be submitted detailing procedures to be followed and individuals to be contacted in the event of loss of normal power supply.

(6) Any alternative capacity requirement granted under this subsection is subject to review and revocation or revision by the executive director. If permission to use an alternative capacity requirement is revoked, the public water system must meet the applicable minimum capacity requirements of this section.

(A) The following conditions, if attributable to the alternative capacity requirements, may constitute grounds for revocation or revision of established alternative capacity requirements or for denial of new requests, if the condition occurred within the last 36 months:

(i) documented pressure below 35 psi at any time not related to line repair, except during fire fighting when it cannot be less than 20 psi;

(ii) water outages due to high water usage;

(iii) mandatory water rationing due to high customer demand or overtaxed water production or supply facilities;

(iv) failure to meet a minimum capacity requirement or an established alternative capacity requirement;

(v) changes in water supply conditions or usage patterns which create a potential threat to public health; or

(vi) any other condition where the executive director finds that the alternative capacity requirement has compromised the public health or resulted in a degradation of service or water quality.

(B) If the executive director finds any of the conditions specified in subparagraph (A) of this paragraph, the process for revocation or revision of an alternative capacity requirement shall be as follows, unless the executive director finds that failure of the service or other threat to public health and safety is imminent under subparagraph (C) of this paragraph.

(i) The executive director must mail the public drinking water system written notice of the executive director's intent to revoke or revise an alternative capacity requirement identifying the specific reason(s) for the proposed action.

(ii) The public water system has 30 days from the date the written notice is mailed to respond to the proposed action.

(iii) The public water system has 30 days from the date the written notice is mailed to request a meeting with the agency's public drinking water program personnel to review the proposal. If requested, such a meeting must occur within 45 days of the date the written notice is mailed.

(iv) After considering any response from or after any requested meeting with the public drinking water system, the executive director must mail written notification to the public drinking water system of the executive director's final decision to continue, revoke, or revise an alternative capacity requirement identifying the specific reason(s) for the decision.

(C) If the executive director finds that failure of the service or other threat to public health and safety is imminent, the executive director may issue written notification of the executive director's final decision to revoke or revise an alternative capacity requirement at any time.