Interconnection between Two Public Water Systems Checklist

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
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Public Water System I.D. No._____
TCEQ Log No. P-_____

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding a proposed interconnection (physical connection) between two Public Water Systems. Engineering report, sealed plans, and specifications meeting, but not limited to, the minimum requirements cited here shall be prepared under the supervision of a Texas licensed professional engineer and submitted to TCEQ for approval. This list is not a substitute for the rules and this checklist cannot be accepted in lieu of the required engineering submittals. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561 or downloaded from the website: http://www.tceq.texas.gov/rules/indxpdf.html

Provide a signed and sealed engineering report that clearly identifies the submittal is for an interconnect between two Public Water Systems (PWS) and provides the following:

1. ☐ The PWS name and number of both the purchasing and the selling PWS;
2. ☐ The purpose of the interconnection, emergency demand, allowed usage, and whether the interconnection will be normally open or normally closed.
3. ☐ Clearly identify the location of the project improvements;
4. ☐ Describe all materials to be installed in the project, such as:
   a. ☐ Diameter, size and pressure class or dimension ratio of the pipe;
   b. ☐ Meter and vault; and,
   c. ☐ Valves, blow-offs and/or sample taps.
5. ☐ Describe the type of disinfection and disinfection systems for both the selling and the purchasing water systems;
6. ☐ Describe who is responsible for sanitary control and how control is maintained; [§290.44(g)(1)(A)]
7. ☐ Describe the water corrosivity of each system using the chemical analysis required (see Item 14 below). Describe any corrosion control treatment used by each system and provide an analysis of the blending of the two waters.
8. ☐ Provide calculations of each system's capacity in regards to well rating, storage, pressure, service pumps and emergency power to show compliance with 30 TAC §290.45. Include details on how the systems will meet §290.45(e)(3)[1] 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. Provide detailed information and calculations for both the existing and proposed improvements;

[1] If the systems do not meet the emergency power requirements, an exception will be required.

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9. ☐ For the capacity calculations (above) of the wholesale water supplier, please provide and consider the following information:
   a. ☐ If an interconnection between systems is proposed to provide a second source of supply for one or both systems, the system being utilized as a second source of supply must be capable of supplying a minimum of 0.35 gallons per minute per connection for the total number of connections in the combined distribution systems; [§290.44(g)(2)]
   b. ☐ Identify and describe all contractual obligations of the selling PWS;
   c. ☐ 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; [§290.45(e)(1)]
   d. ☐ 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**. Fire flow capacities, if required by §290.46(x) and (y) of this title (see below),** will be added to the maximum amount of water obligated or pledged under all wholesale contracts; [§290.45(e)(2)]

10. ☐ For the purchased water system contract, please provide and consider the following information:
   a. ☐ 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; [§290.45(f)(1)]
   b. ☐ The contract shall authorize the purchase of enough water to meet the monthly or annual needs of the purchaser; [§290.45(f)(2)]
   c. ☐ The contract shall 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; [§290.45(f)(3)]
   d. ☐ 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; [§290.45(f)(4)]
   e. ☐ 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; [§290.45(f)(5)]
   f. ☐ 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; and [§290.45(f)(6)]
   g. ☐ **All other minimum capacity requirements specified in this section and §290.46(x) and (y) (see below) of this title shall apply**. [§290.45(f)(7)]

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Report Appendices are to include:

11. ☐ Executed copies of the purchase water contract, with all attachments that demonstrate production, storage, service pump, or pressure maintenance capacity are properly evaluated; [§290.45(f)(1)]
12. ☐ Documents covering the responsibility for sanitary control shall accompany submitted planning material (should be part of contract); [§290.44(g)(1)(A)]
13. ☐ Complete Engineering plans and specifications; [§290.39(d) and §290.44]
    a. ☐ Sample taps should be provided on each side of the metering device, such as 2-inch blow-offs with standard operating procedures (SOP) developed and submitted for review;
14. ☐ A chemical analysis report for water samples is required for both distribution systems for contaminants listed below. Reports must come from a laboratory accredited by TCEQ to perform these tests. If blending to affect MCL exceedance, additional chemical analysis may be requested.

Table 1: Water Quality Parameters

PARAMETER	UNITS
Alkalinity as $CaCO_3$	mg/l
Calcium as $CaCO_3$	mg/l
Sodium	mg/l
Sulfate	mg/l
Chloride	mg/l
Iron	mg/l
Manganese	mg/l
Total Dissolved Solids	mg/l
Temperature (field test)	Degrees C
pH (field test)	

15. ☐ Submit all necessary information to demonstrate the minimum capacity requirements specified in §290.46(x) and (y) have been met, if applicable, [§290.45(f)(7)] such as:
    ☐ a. Fire hydrants placed as required by city ordinance and TCEQ rules 290.44(e)(6).
    ☐ b. GST capacity sufficient for water supply and fire flow (i.e. 250 gpm for 120 minutes or ordinance requirements, whichever greater).
    ☐ c. Service pumps sufficient for water supply and fire flow (250 gpm or ordinance requirements whichever greater).
    ☐ d. Distribution piping sized at least 6-inches or distribution model to demonstrate sufficient capacity (250 gpm or ordinance requirement, whichever greater).

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Fire Flow Requirements Breakdown

§290.46(x) Public safety standards.

This subsection only applies to a municipality with a population of 1,000,000 or more, with a public utility within its corporate limits; a municipality with a population of more than 36,000 and less than 41,000 located in two counties, one of which is a county with a population of more than 1.8 million; a municipality, including any industrial district within the municipality or its extraterritorial jurisdiction (ETJ), with a population of more than 7,000 and less than 30,000 located in a county with a population of more than 155,000 and less than 180,000; or a municipality, including any industrial district within the municipality or its ETJ, with a population of more than 11,000 and less than 18,000 located in a county with a population of more than 125,000 and less than 230,000.

Fire Flow Requirements at a Glance as of February 2019: (subject to change with each subsequent census)

30 TAC 290.46(x) Flow requirements are applicable only to investor owned utilities within municipal jurisdiction.

Municipalities >1,000,000 population:

- City of Dallas
- City of Houston
- City of San Antonio

Municipalities >36,000 <41,000 population located in two counties. One of which is greater than a population of 1.8 million:

- City of Burleson Population: 36,690 (Counties: Johnson and Tarrant)
- City of Coppell Population: 38,659 (Counties: Dallas and Denton)

30 TAC 290.46(x) Flow requirements are applicable only to investor owned utilities within municipal jurisdiction including ETJ and Industrial district)

Municipalities >7,000 <30,000 pop., in one county >155,000 <180,000 population:

- City of Buda: Population 7,295 (County: Hays)
- City of Kyle: Population 28,016 (County: Hays)

Municipalities >11,000 <18,000 pop., in one county >125,000 <230,000 population:

- City of Crowley: Population 12,838 (County: Johnson)
- City of Glenn Heights: Population 11,278 (County: Ellis county)

§290.46(y)(2) The governing body of a municipality by ordinance may adopt standards set by the executive director requiring a utility to maintain a minimum sufficient water flow and pressure to fire hydrants in a residential area located in the municipality or the municipality's ETJ. The municipality must submit a signed copy of the ordinance to the executive director within 60 days of the adoption of an ordinance by its governing body.

The engineer shall check municipal requirements and ensure the design is adequate to meet specific municipal requirements.