

Disinfection 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 proposed disinfection facility construction. Sealed plans, engineering report, 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>

1. All water obtained from surface sources or groundwater sources that are under the direct influence of surface water must be disinfected in a manner consistent with the requirements of §290.110 of this title; [§290.42(e)(1)]
2. All groundwater must be disinfected prior to distribution and in a manner consistent with the requirements of §290.110 of this title. The point of application must be ahead of the water storage tank(s) if storage is provided prior to distribution. Permission to use alternate disinfectant application points must be obtained in writing from the executive director; [§290.42(e)(2)]
3. Disinfection equipment shall be selected and installed so that continuous and effective disinfection can be secured under all conditions; [§290.42(e)(3)]
4. Disinfection equipment shall have a capacity at least 50% greater than the highest expected dosage to be applied at any time. It shall be capable of satisfactory operation under every prevailing hydraulic condition; [§290.42(e)(3)(A)]
5. Automatic proportioning of the disinfectant dosage to the flow rate of the water being treated shall be provided at plants where the treatment rate varies automatically and at all plants where the treatment rate varies more than 50% above or below the average flow. Manual control shall be permissible only if an operator is always on hand to make adjustments promptly; [§290.42(e)(3)(B)]
6. All disinfecting equipment in surface water treatment plants shall include at least one functional standby unit of each capacity for ensuring uninterrupted operation. Common standby units are permissible but, generally, more than one standby unit must be provided because of the differences in feed rates or the physical state in which the disinfectants are being fed (solid, liquid, or gas); [§290.42(e)(3)(C)]
7. Facilities shall be provided for determining the amount of disinfectant used daily and the amount of disinfectant remaining for use; [§290.42(e)(3)(D)]
8. When used, solutions of calcium hypochlorite shall be prepared in a separate mixing tank and allowed to settle so that only a clear supernatant liquid is transferred to the hypochlorinator container; [§290.42(e)(3)(E)]
9. Provisions shall be made for both pretreatment disinfection and post-disinfection in all surface water treatment plants. Additional application points shall be installed if they are required to adequately control the quality of the treated water; [§290.42(e)(3)(F)]

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10. The use of disinfectants other than free chlorine and chloramines will be considered on a case-by-case basis under the exception guidelines of §290.39(l) of this title. [§290.42(e)(3)(G)] If water containing chloramines and water containing free chlorine are blended, then a case-by-case review under §290.39(l) of this title will be required; [§290.42(e)(3)(G)]
11. When chlorine gas is used, a full-face self-contained breathing apparatus or supplied air respirator that meets Occupational Safety and Health Administration (OSHA) standards for construction and operation, and a small bottle of fresh ammonia solution (or approved equal) for testing for chlorine leakage shall be readily accessible outside the chlorinator room and immediately available to the operator in the event of an emergency; [§290.42(e)(4)(A)]
12. Housing for gas chlorination equipment and cylinders of chlorine shall be in separate buildings or separate rooms with impervious walls or partitions separating all mechanical and electrical equipment from the chlorine facilities. Housing shall be located above ground level as a measure of safety. Equipment and cylinders may be installed on the outside of the buildings when protected from adverse weather conditions and vandalism; [§290.42(e)(4)(B)]
13. Adequate ventilation, which includes both high level and floor level screened vents, shall be provided for all enclosures in which gas chlorine is being stored or fed. Enclosures containing more than one operating 150-pound cylinder of chlorine shall also provide forced air ventilation which includes: screened and louvered floor level and high level vents; a fan which is located at and draws air in through the top vent and discharges to the outside atmosphere through the floor level vent; and a fan switch located outside the enclosure. Alternately, systems may install negative pressure ventilation as long as the facilities also have gas containment and treatment as prescribed by the current International Fire Code (IFC); and [§290.42(e)(4)(C)]
14. Hypochlorination solution containers and pumps must be housed in a secure enclosure to protect them from adverse weather conditions and vandalism. The solution container top must be completely covered to prevent the entrance of dust, insects, and other contaminants. [§290.42(e)(5)]

For Chloramines – Use the Chloramine Checklist