64669.85 Pathogen and Chemical Control Point Monitoring and Response

(a)

Pathogen control points and chemical control points shall be used to demonstrate control of acute and chronic exposure threats as follows. A DiPRRA shall utilize a SCADA system meeting the requirements in subsection (d) to manage information generated at the pathogen and chemical control points. (1) Pathogen and chemical control points shall be identified, and at least one critical limit shall be identified for each control point, pursuant to requirements in: (A) subsections 64669.45(a)(5)(D) and 64669.45(e); (B) subsections 64669.50(e)(3), 64669.50(h), 64669.50(k)(2), and 64669.50(n)(1); and (C) subsection 64669.60(g)(1). (2) Each pathogen and chemical control point shall be equipped with online monitoring sufficient to determine whether a critical limit is being met. (3) If the online monitoring required in subsection (a)(2) is unable to demonstrate compliance with a critical limit, regardless of the cause, the associated critical limit(s) shall be deemed to not have been met. Any pathogen control point surrogate and/or operational parameter that is not meeting the associated critical limit means the treatment process is not credited with the associated LRV pursuant to section 64669.45(a) and (d).

(1)

Pathogen and chemical control points shall be identified, and at least one critical limit

shall be identified for each control point, pursuant to requirements in: (A) subsections 64669.45(a)(5)(D) and 64669.45(e); (B) subsections 64669.50(e)(3), 64669.50(h), 64669.50(k)(2), and 64669.50(n)(1); and (C) subsection 64669.60(g)(1).

(A)

subsections 64669.45(a)(5)(D) and 64669.45(e);

(B)

subsections 64669.50(e)(3), 64669.50(h), 64669.50(k)(2), and 64669.50(n)(1); and

(C)

subsection 64669.60(g)(1).

(2)

Each pathogen and chemical control point shall be equipped with online monitoring sufficient to determine whether a critical limit is being met.

(3)

If the online monitoring required in subsection (a)(2) is unable to demonstrate compliance with a critical limit, regardless of the cause, the associated critical limit(s) shall be deemed to not have been met. Any pathogen control point surrogate and/or operational parameter that is not meeting the associated critical limit means the treatment process is not credited with the associated LRV pursuant to section 64669.45(a) and (d).

(b)

Water posing an acute exposure threat, as defined in subsection (b)(1), shall be prevented from entering the water distribution system of a public water system. (1) The following are considered acute exposure threats:(A) Failure to provide 16 log reduction of enteric virus, 10 log reduction of Giardia lamblia cyst, and 11 log reduction of Cryptosporidium oocyst pursuant to section 64669.45(b)(2); (B) Failure to meet nitrate, nitrite, or nitrate plus nitrite MCLs, based on monitoring

conducted pursuant to section 64669.60(g); and (C) Failure to meet the TOC critical limit pursuant to section 64669.50(n). (2) The treatment train, storage facilities, related pipelines, and water conveyance facilities shall provide a path for water to flow from each pathogen and chemical control point to a point of diversion or shutoff that allows time for the identification and diversion or shutoff of water posing an acute exposure threat. The time required for the water to travel along the path of flow from each pathogen and chemical control point to a point of diversion or shutoff shall take into account the following: (A) The maximum time between online measurements taken at each individual pathogen control point and chemical control point monitoring location; (B) The maximum time it takes for online measurements to be accessed by the SCADA system, and an assessment made as to whether the critical limit is being met; and (C) The maximum time it takes for the SCADA system to:1. determine if the 16 log reduction for enteric virus, 10 log reduction for Giardia lamblia cyst, and 11 log reduction for Cryptosporidium oocyst are being achieved; if the TOC concentration meets the TOC critical limit pursuant to subsection (n); and if the nitrate, nitrite, and nitrate plus nitrite concentrations comply with the MCLs for nitrate, nitrite, and nitrate plus nitrite, respectively; 2. actuate a diversion or shutoff valve if 16 log reduction for enteric virus, 10 log reduction for Giardia lamblia cyst, or 11 log reduction for Cryptosporidium oocyst are not achieved, if the TOC concentration exceeds the TOC critical limit pursuant to section 64669.50(n), or if the nitrate concentration exceeds the MCL; and 3. divert or shut off flow to the distribution system. (3) The time it takes for the first ten percent of the water to flow along the flow path from each pathogen and chemical control point to the point of diversion or shutoff shall be no less than the time required for the identification and diversion or shutoff of inadequately treated water as

determined in subsection (b)(2).

(1)

The following are considered acute exposure threats:(A) Failure to provide 16 log reduction of enteric virus, 10 log reduction of Giardia lamblia cyst, and 11 log reduction of Cryptosporidium oocyst pursuant to section 64669.45(b)(2); (B) Failure to meet nitrate, nitrite, or nitrate plus nitrite MCLs, based on monitoring conducted pursuant to section 64669.60(g); and (C) Failure to meet the TOC critical limit pursuant to section 64669.50(n).

(A)

Failure to provide 16 log reduction of enteric virus, 10 log reduction of Giardia lamblia cyst, and 11 log reduction of Cryptosporidium oocyst pursuant to section 64669.45(b)(2);

(B)

Failure to meet nitrate, nitrite, or nitrate plus nitrite MCLs, based on monitoring conducted pursuant to section 64669.60(g); and

(C)

Failure to meet the TOC critical limit pursuant to section 64669.50(n).

(2)

The treatment train, storage facilities, related pipelines, and water conveyance facilities shall provide a path for water to flow from each pathogen and chemical control point to a point of diversion or shutoff that allows time for the identification and diversion or shutoff of water posing an acute exposure threat. The time required for the water to travel along the path of flow from each pathogen and chemical control point to a point of diversion or shutoff shall take into account the following: (A) The maximum time between online measurements taken at each individual pathogen control point and chemical control point monitoring location; (B) The maximum time it takes for online measurements to be accessed by the SCADA system, and an

assessment made as to whether the critical limit is being met; and (C) The maximum time it takes for the SCADA system to:1. determine if the 16 log reduction for enteric virus, 10 log reduction for Giardia lamblia cyst, and 11 log reduction for Cryptosporidium oocyst are being achieved; if the TOC concentration meets the TOC critical limit pursuant to subsection (n); and if the nitrate, nitrite, and nitrate plus nitrite concentrations comply with the MCLs for nitrate, nitrite, and nitrate plus nitrite, respectively; 2. actuate a diversion or shutoff valve if 16 log reduction for enteric virus, 10 log reduction for Giardia lamblia cyst, or 11 log reduction for Cryptosporidium oocyst are not achieved, if the TOC concentration exceeds the TOC critical limit pursuant to section 64669.50(n), or if the nitrate concentration exceeds the MCL; and 3. divert or shut off flow to the distribution system.

(A)

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(B)

The maximum time it takes for online measurements to be accessed by the SCADA system, and an assessment made as to whether the critical limit is being met; and

(C)

The maximum time it takes for the SCADA system to:1. determine if the 16 log reduction for enteric virus, 10 log reduction for Giardia lamblia cyst, and 11 log reduction for Cryptosporidium oocyst are being achieved; if the TOC concentration meets the TOC critical limit pursuant to subsection (n); and if the nitrate, nitrite, and nitrate plus nitrite concentrations comply with the MCLs for nitrate, nitrite, and nitrate plus nitrite, respectively; 2. actuate a diversion or shutoff valve if 16 log reduction for enteric virus, 10 log reduction for Giardia lamblia cyst, or 11 log reduction for Cryptosporidium oocyst are not achieved, if the TOC concentration exceeds the TOC critical limit pursuant to section 64669.50(n), or if

the nitrate concentration exceeds the MCL; and 3. divert or shut off flow to the distribution system.

1.

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2.

actuate a diversion or shutoff valve if 16 log reduction for enteric virus, 10 log reduction for Giardia lamblia cyst, or 11 log reduction for Cryptosporidium oocyst are not achieved, if the TOC concentration exceeds the TOC critical limit pursuant to section 64669.50(n), or if the nitrate concentration exceeds the MCL; and

3.

divert or shut off flow to the distribution system.

(3)

The time it takes for the first ten percent of the water to flow along the flow path from each pathogen and chemical control point to the point of diversion or shutoff shall be no less than the time required for the identification and diversion or shutoff of inadequately treated water as determined in subsection (b)(2).

(c)

A chronic exposure threat is deemed to occur when the following occurs for more than two consecutive months: for more than 10 percent of the time the treatment train was producing water in a calendar month there is any treatment process pursuant to sections 64669.50(a) and (b) that is not operating in compliance with its associated critical limits pursuant to sections 64669.50(e), (h), or (k). Water posing a chronic exposure threat shall be prevented from entering the water

distribution system of a public water system.

(d)

The SCADA systems of all water treatment plants included in the DPR project that provide treatment pursuant to this Article shall be designed and operated with the following features and capabilities. The SCADA system shall:(1) provide alarms that alert the operator when a pathogen or chemical control point is not operating as designed and halt the flow of water if necessary. (2) identify trending degradation and significant excursions of water quality or surrogate and/or operational parameters that indicate a need for treatment adjustment, maintenance, or other operator intervention; and alert the operator of the trending degradation or significant excursion incident and generate a record. (3) communicate and interoperate with the SCADA systems of all water treatment plants included in the DPR project that provide treatment pursuant to this Article. (4) be secured and protected, both physically and electronically, from unauthorized access and cyberattack. (5) be tested following the protocol in an approved operations plan pursuant to section 64669.80.

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(5)

be tested following the protocol in an approved operations plan pursuant to section 64669.80.