CALIFORNIA Water Boards

Lahontan Regional Water Quality Control Board

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DATE: March 27, 2013

COMMENTS ON PG&E'S REQUEST TO MODIFY WHOLE HOUSE REPLACEMENT WATER MONITORING PROGRAM, PACIFIC GAS AND ELECTRIC COMPANY (PG&E), HINKLEY COMPRESSOR STATION, SAN BERNARDINO COUNTY, CLEANUP AND ABATEMENT ORDER (CAO) NOS. R6V-2011-0005A1 AND R6V-2011-0005A2

The Prosecution Team is providing comments and recommendations regarding two request letters from PG&E for the whole house replacement water (WHRW) program. The WHRW program is required in amended CAO R6V-2011-0005A1 and a specific program offered by PG&E is adopted within amended CAO R6V-2011-0005A2. PG&E's January 10, 2013 letter requests to modify the whole house replacement water (WHRW) monitoring program in Hinkley. PG&E's February 7, 2013 letter requests a 90-day extension of all applicable deadlines in CAO R6V-2011-0005A1 to re-examine the current program and determine if additional WHRW options should be offered to Hinkley residents.

After review of data and other information, the Prosecution Team agrees that some changes can be made to the current monitoring program for the WHRW program to prevent unnecessary inconvenience for Hinkley residents. In addition, we believe that some structural changes to the overall WHRW program should be allowed. The following discussions provide the Prosecution Team's comments and recommendations concerning these issues.

PROPOSED REDUCED MONITORING PROGRAM

The WHRW monitoring and reporting program is required by Amended CAOs R6V-2011-0005A1 and R6V-2011-0005A2. The current monitoring program requires PG&E to perform system startup sampling after the outdoor ion exchange resin filters and after each indoor reverse osmosis system. Testing must show that treated water does not contain chemicals above drinking water standards or above the hexavalent chromium reporting limit of 0.06 micrograms per liter (µg/L) before human consumption is allowed. Community members have reported that sampling of each ion exchange and reverse osmosis filter has been reported to take one half-hour or more. Hinkley residents have voiced concerns that this monitoring is an inconvenience.

PG&E proposes to modify the monitoring program by the following means:

- Ion exchange resin treated water, called leachate, will be sampled once per batch by the manufacturer rather than at each home during startup. Two batches have been ordered to date, for 10 and 30 resin filters.
- Resin leachate would be tested throughout the program life rather than just during startup.
- For the reverse osmosis (RO) systems installed beneath sinks inside homes, instead of bi-weekly sampling for the first six months, PG&E proposes to sample only during the startup period.
- Follow-up monitoring will occur every six months and change out reverse osmosis filters will be left with the residents.

PG&E believes the proposed monitoring would significantly reduce the number of treated water samples collected and reduce the inconvenience to Hinkley residents.

Prosecution Team Comments

<u>Ion Exchange Treatment System Sampling</u>

The proposed modifications to the monitoring program fail to discuss and take into consideration the monitoring results of two operating WHRW systems, documented in PG&E's November 20, 2012 monitoring report. This report notified the Water Board of hexavalent chromium detections in sampling from multiple reverse osmosis systems at both residences and an ion exchange system at one residence. Additional monitoring information by PG&E, submitted in February 2013, showed continued low levels of hexavalent chromium in reverse osmosis treated water samples and in one of the ion exchange units.

The Prosecution Team does not feel that modifications as proposed to the sampling program for the ion exchange systems are appropriate. Monitoring information by PG&E shows that while one of two operating WHRW systems had resin leachate containing no detectable levels of hexavalent chromium, the second operating system contained detectable hexavalent chromium in initial startup leachate samples from both ion exchange filters. Follow-up sampling 16 days later showed non-detect results for hexavalent chromium in the second operating system. Such information indicates there are at least detectable levels of hexavalent chromium in resin leachate in 50 percent of the residences during initial system sampling. Therefore, the Prosecution Team has concluded that PG&E's proposal to sample only one out of a batch of 10 to 30 filters, or 10 to 3 percent, is not statistically appropriate to provide adequate protection to the public. In addition, the proposal to collect resin leachate samples throughout the program life was not clear with regards to the number, frequency, and location. We therefore recommend that the Advisory Team deny PG&E's request to modify the ion-exchange sampling program.

Reverse Osmosis Treatment System Sampling

The Water Board Prosecution Team also has concerns about the number of samples and frequency of sampling proposed by PG&E for the reverse osmosis systems inside residences. Proposed monitoring would reduce the number of sampling events from 13 in the first six months to one. Reverse osmosis monitoring results in PG&E's November 20, 2012 letter show that hexavalent chromium was detected in two of three reverse osmosis systems operating at both residences during initial startup. At one residence, hexavalent chromium at 0.19 µg/L continued to be detected at one of the reverse osmosis systems in follow-up sampling twenty-one days later.

Subsequent monitoring reports show sampling results similar to results reported in the November 2012 reports. The February 2013 monitoring reports cite concentrations of hexavalent chromium in water from the undersink reverse osmosis units ranging from non-detect to 0.35 µg/L when the corresponding Ion Exchange system reported chromium levels of non-detect. A March 11, 2013 technical report by Arcadis reveals a finding that reverse osmosis systems having chromium containing components are possible sources of low level hexavalent chromium in treated water. Additionally, there is speculation that plumbing fixtures inside residences can also account for low detections of the chemical.

Based on these results, we do not concur that the reverse osmosis sampling should be modified as suggested by PG&E. It appears statistically inappropriate to reduce sampling of the reverse osmosis systems by 92 percent when two-thirds of the systems had detectable hexavalent chromium concentrations during initial system startup and one continues to have detections. However, given the inconvenience of performing sampling of reverse osmosis systems in Hinkley resident's homes, the Prosecution Team staff believes some changes to the implementation of the reverse osmosis filtration component of the whole household replacement water program are reasonable.

PG&E's March 11, 2013 Reverse Osmosis Investigation Report states that even when the reverse osmosis systems are functioning as designed, sporadic concentrations of hexavalent chromium are detected in treated water during the first few months of operation. Up to 0.35 µg/L was detected in samples from reverse osmosis systems at one residence and up to 0.19 µg/L was detected in samples at the second residence. After three months of sampling, hexavalent chromium was detected at less than 0.06 µg/L from then on at both residences. The investigation was unable to determine whether the source of chromium detections were components within the reverse osmosis systems or from residential plumbing (e.g. pressure tank, piping, and fixtures). Based on these results, PG&E requests that the point of compliance for chromium be at the end point for the ion exchange systems. After initial system start-up kitchen reverse osmosis systems be the point of compliance within residences since it is typically the most-used faucet. And based upon potential leaching from the reverse osmosis systems and residential plumbing fixtures, PG&E requests the hexavalent chromium detection limit be increased to industry standards of 2 µg/L.

The Prosecution Team believes PG&E has presented data to show that hexavalent chromium may be stemming from components in the reverse osmosis systems or sloughing of low levels of existing chromium in residential plumbing fixtures that are both beyond PG&E's control. The Prosecution Team does not believe that raising the detection limit to 2 µg/L is reasonable for a home-use system. The Prosecution Team thinks it makes sense to give Hinkley residents the option of either 1) accepting a reverse osmosis system in addition to the ion exchange system or 2) decline reverse osmosis systems and use only the ion exchange system recognizing that hexavalent chromium will be removed, but other constituents found in the domestic well may not be removed.

REQUEST TO MODIFY DETECTION LIMIT IN BOTTLED WATER

PG&E in its February 7, 2013 letter requests that the detection limit for hexavalent chromium in bottled water be raised from the current limit of less than 0.06 µg/L. The Prosecution Team's review of PG&E's January 10 and February 7 letters do not reveal data or information to support the request to alter the detection limit for hexavalent chromium in bottled water. Since there are no justifications that are outside of PG&E's control, as was submitted for the reverse osmosis systems, there appears to be no basis for granting the request to raise the detection limit. Therefore, the Prosecution Team recommends that the hexavalent chromium detection limit for bottled water remain as is at less than 0.06 µg/L.

EXTENSION OF DEADLINES TO RE-EXAMINE WHRW PROGRAM

PG&E's February 7, 2013 letter proposes four modifications to the WHRW program.

1. A 90-day extension of all applicable deadlines set in CAO R6V-2011-0005A1 to allow for re-examination of the WHRW program.

2. Hinkley residents be allowed to decline reverse osmosis units when the ion exchange filter systems is selected for whole house water. Also, approve the January 10, 2013 request to modify the monitoring program for ion exchange and reverse osmosis systems.

3. Allow for the interim bottled water program to be used as a permanent remedy for WHRW.

4. Re-evaluate the need to expand the one-mile buffer zone in the future to residents with detectable chromium in water supply wells.

Comments

The Prosecution Team offers the following responses in the proposed numerical order to PG&E's request.

1. Since it has been 1-1/2 months since the February 7, 2013 letter and PG&E has since contacted Hinkley residents concerning the matter, the request for 90-day extension of deadlines no longer appears warranted. An extension of 30 or 45 days of deadlines should be adequate for PG&E to provide results of its re-examination of the WHRW program and be able to implement any modified options for households by September 2013.

2. We support allowing residents the option to decline reverse osmosis systems where water following the ion exchange treatment meets all primary drinking water standards (i.e., may not meet a secondary limit for total dissolved solids which may affect taste).

3. Allowing the interim bottled water program to be selected by a resident as a permanent option in lieu of a whole house water system does not appear to meet the intent of orders in CAO R6V-2011-0005A1 because it does not provide treated water at all indoor faucets. However, it seems reasonable to allow Hinkley residents to make this decision and decline a whole house water system, while electing to continue receiving bottled water for drinking and cooking purposes from PG&E (an amendment to the CAO could clarify this as an acceptable option).

4. We have no objections to re-evaluating the one-mile buffer zone made a part of amended CAO R6V-2011-0005A2.

RECOMMENDATIONS

The Prosecution Team offers the following recommendations to the Advisory Team concerning PG&E's requests.

1. The compliance limit for ion-exchange systems and bottled water program should stay at 0.06 µg/L. The compliance limit for total chromium shall stay at the laboratory detection limit of 1.0 µg/L.

2. For residences where filtration through the ion-exchange system alone does not meet primary drinking water standards for other constituents (nitrates and salts), the implementation and monitoring program for the WHRW be modified in the following manner:

    a. PG&E must provide reverse osmosis systems as described in the revised CAO.
    b. Monitoring for reverse osmosis systems should be reduced from monthly to quarterly.
    c. For the first three months following installation, compliance limit for reverse-osmosis treatment systems should be raised to 0.3 µg/L. This will account for typical hexavalent chromium levels detected in reverse osmosis systems in Hinkley during a normal startup period.
    d. After this initial time period, the reverse osmosis compliance limit should be decreased to 0.06 µg/L as required by the revised CAO.
    e. PG&E shall provide bottled water to residents until the reverse osmosis system meets all primary drinking water standard and the hexavalent chromium standard of 0.06 µg/L.

3. For residences where the ion-exchange leachate is meeting all primary drinking water standards, the hexavalent chromium standard of 0.06 µg/L, and the total chromium standard of 1 µg/L, reverse osmosis systems shall be optional. PG&E will only be required to conduct monitoring for optional reverse osmosis systems if a resident requests them to do so.

4. Allow a 30 to 45-day extension of applicable deadlines set in CAO R6V-2011-0005A1 for re-evaluating the current WHRW program and determine if changes should be made and if other WHRW options should be offered to residents.

5. Agree to allow residents to opt out of choosing a WHRW system and instead be able to continue indefinitely on the bottled water program, if they so choose.

If you should have any questions, please contact me at (530) 542-5436 or at lkemper@waterboards.ca.gov.

cc: PG&E Technical Mail List and Lyris List