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STATE OF ILLINOIS
Pollution Control Board

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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| IN THE MATTER OF: | ) | |
| | ) | |
| REVISIONS TO RADIUM QUALITY | ) | |
| STANDARDS: PROPOSED NEW ILL. ADM. | ) | R 04-21 |
| CODE 302.307 and AMENDMENTS TO | ) | (Rulemaking – Water) |
| 35 ILL. ADM. CODE 302.207 and 302.525 | ) | |

TO: Dorothy Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph Street, Suite 11-500
Chicago, Illinois 60601

PC#24

The Illinois Emergency Management Agency (IEMA) respectfully submits the following comments to the Illinois Pollution Control Board ("Board") on the captioned proposed rulemaking.

IEMA agrees that the existing General Use Water Quality standard for radium-226 of 1 pCi/L is too low, given a number of practical considerations. The two most important of these considerations are the existing drinking water standard and the existing levels in natural background.

IEMA's position is that the General Use Water Quality standard should be set for the protection of human health. As such, our position is that the existing drinking water standard serves as an important benchmark for the current rulemaking. Given the current drinking water standard of 5 pCi/L, IEMA fails to see how a General Use Water Quality standard of 1 pCi/L can be supported by science that relates to human health considerations. It should also be noted that if Congress had not directed USEPA to drop its proposed radon standard, the current drinking water radium Maximum Contaminant Level would probably be 20 pCi/L for radium-226 and 20 pCi/L for radium-228.

IEMA performs testing on most of the community drinking water in the state. Our testing indicates that natural background radium concentrations in Northern Illinois groundwater range from less than detectable up to about 25 or 30 pCi/L. IEMA does not wish to argue about effluent releases from water treatment facilities or sewage treatment facilities in this submission. However, we would simply point out that common uses of groundwater that do not result in concentration of radium would be in violation of the current rule, if discharged to surface waters. Such common uses would include use of the water for domestic

purposes by individual users who do not treat for radium, cropland irrigation and once-through cooling systems used in industry.

IEMA's position is that IEPA's proposal to change the public and food processing water supply standard to 5 pCi/L is supportable. The support is provided by the large volume of documentation generated by USEPA in its December 7, 2000, rulemaking that re-affirmed the drinking water standard. On the other hand, IEPA's proposal to completely eliminate the rest of the General Use Water Quality Standard for radium is probably not supportable. To eliminate this standard in its entirety could allow significant sources of discharge to go unchecked. IEMA would support a numerical standard based on human health risk.

IEMA recognizes the arguments put forth by environmental groups concerned about radiation exposures to aquatic biota. These may be legitimate concerns, but IEMA's position is that protection of aquatic biota was not an original objective of the General Use Water Quality standard for radium. To generate a new standard with such an objective would constitute a major policy shift. To clarify, it is understood that IEPA and the Board have addressed protection of aquatic biota in previous rulemakings. Our point is that they have not explicitly done so for radioactive constituents. If the Board wishes to entertain such a policy shift, it should consider such action as a new initiative capable of standing on its own merits. At the moment, the argument has only been made as a rebuttal to IEPA's proposal. Such an initiative should be supported by Illinois specific environmental data, which we think all parties will agree, is either insufficient, or not in high enough quality to bring forward for the Board's consideration.

Therefore, in recognition of both IEPA's proposal and the objections that appear in the record, we recommend the following approach to moving forward on this rulemaking.

First, we would suggest setting an interim standard for protection of human health by adoption of a federal standard that IEMA suggests is relevant and appropriate for this purpose. We suggest that the interim standard be adopted from the U. S. Nuclear Regulatory Commission's (NRC) 10 CFR Part 20 Appendix B. IEMA has adopted this standard into Illinois radiation protection regulations at 32 IAC Part 340. The Appendix B Table 2 effluent concentration limit for radium in water is 60 pCi/L. This standard applies to radioactive materials licensees who discharge to surface waters. This standard relates directly to radiation dose to humans. The concentrations in Table 2 are equivalent to the radionuclide concentrations, which if ingested continuously over the course of a year, would produce a total effective dose equivalent of 50 millirem. For reference, the dose equivalent limit to members of the general public is 100 millirem.

Second, we would suggest that IEPA work with interested parties towards a determination of whether that interim standard is sufficiently protective of aquatic biota, or whether a more restrictive standard would be more appropriate. At this point, interested parties would propose this new policy initiative to the Board. Such a policy initiative should be supported by a number of important elements. This initiative should articulate a clear objective. As stated by the National Council on Radiation Protection and Measurements in NCRP Report 109, the fate of individual organisms is, generally, not the major concern but rather the response and maintenance of endemic populations. If the objective of the initiative is not in agreement with NCRP recommendations, it should be clearly stated. In any case, the initiative should be supported by a carefully developed Illinois specific data package and modeling effort.

IEMA believes that this two-phased approach will address IEPA's short term objectives to revise the General Use Water Quality standard to one, which is supported by science related to human health risk and will allow other interested parties to present a carefully developed case for a policy change to provide for protection of aquatic biota.

Respectfully submitted,

ILLINOIS EMERGENCY
MANAGEMENT AGENCY

By: Richard Allen

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December 7, 2004

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