

ILLINOIS POLLUTION CONTROL BOARD
March 6, 2008

IN THE MATTER OF:)
)
PROCEDURES REQUIRED BY P.A. 94-849) R07-20
FOR REPORTING RELEASES OF) (Rulemaking - Water)
RADIONUCLIDES AT NUCLEAR POWER)
PLANTS: NEW 35 Ill. Adm. Code 1010)

Proposed Rule. Second Notice.

OPINION AND ORDER OF THE BOARD (by G.T. Girard):

Pursuant to P.A. 94-849, the Illinois Environmental Protection Agency (Agency) proposed rules for prescribing standards for detecting and reporting unpermitted releases of radionuclides from nuclear power plants. The Board has held two hearings and accepted comments on the proposal. On December 6, 2007, the Board proposed for first notice the rule as proposed by the Agency, with only minor changes. The rule was published in the *Illinois Register* on December 21m 2007. *See* 31 Ill. Reg. 16685 (Dec. 21, 2007). The Board has received no additional comment and has held no additional hearings; therefore, the Board today proposes for second notice the rule as proposed for first notice making only minor nonsubstantive changes.

The Board will briefly describe the procedural background and then summarize the rule language. Finally, the Board will discuss the reasons for proceeding to second notice.

PROCEDURAL BACKGROUND

On May 25, 2007, the Agency filed a proposal as required by Section 13.6(e) of the Environmental Protection Act (Act) (415 ILCS 5/13.6(e) (2006)). The proposal included a 10-page statement of reasons (Reasons). On June 21, 2007, the Board accepted the rulemaking for hearing.

On July 13, 2007, in accordance with Section 27(b) of the Act (415 ILCS 5/27(b) (2006)), the Board requested that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study for this rulemaking. On August 7, 2007, the Board was informed that the DCEO had decided not to conduct an economic impact study for this rulemaking. At the public hearing held on October 10, 2007 (Tr.2), the Board solicited comments on DCEO's decision not to conduct an economic impact study. No comments were offered. Tr.2 at 5-6.

On August 24, 2007, the Board received pre-filed testimony from Zigmund Karpa on behalf of Exelon Nuclear (Exelon) (Exh. 3) and Richard Cobb on behalf of the Agency (Exh. 1). The Board held two hearings in this proceeding before Hearing Officer Marie Tipsord. The first

hearing was held on September 5, 2007, in Chicago (Tr.1) and the second October 10, 2007, in Springfield (Tr.2). At those hearings the Board heard testimony from:

Kyle Rominger and Richard Cobb on behalf of the Agency;
Zigmund Karpa on behalf of Exelon.

At the close of hearings a November 1, 2007 deadline for public comments to be filed was set. The Board received two public comments in this matter, both from the Agency (PC 1, PC 2).

On December 6, 2007, the Board adopted the rule for first notice. The proposed rule was published in the *Illinois Register* on December 21, 2007. The Board received no additional public comment and no requests for additional hearings.

SUMMARY OF THE RULE

The rule proposes procedures for reporting releases of radionuclides at nuclear power plants. The procedures proposed will allow licensees of power plants to fulfill their obligation under Section 13.6 of the Act (415 ILCS 5/13.6 (2006)) to report unpermitted releases of radionuclides to the Agency and Illinois Emergency Management Agency (IEMA). These procedures establish a requirement that within 24 hours of any unpermitted release of radionuclides into the groundwater, surface water, or soil, the licensee must evaluate the release to determine whether it needs to be reported and, if reporting is necessary, make a report to the Agency and IEMA within that same 24 hours. *See* Section 1010.200. The proposal gives the proper procedure for reporting the releases, including the appropriate reporting phone numbers for the Agency and IEMA as well as instructions on electronic reporting. *See* Section 1010.202. The proposal further requires a follow-up written report be sent to the Agency and IEMA within five days after reporting the release. *See* Section 1010.204. This follow-up report must contain the information required for the initial report as well as supplemental information on the release utilizing the best data available. *Id.*

Under the proposed rules, a radionuclide is deemed to have been detected if an unpermitted release of liquids either: 1) results in tritium concentrations of 200 picocuries per liter (pCi/L) or more outside the licensee controlled area, or 2) contains tritium at quantities of 0.002 Curies (Ci) or more. PC 2 at 2.

Tritium is a radionuclide that is a natural byproduct of electricity production in nuclear power plants. Exh. 1 at 3. Tritium is also naturally produced in the atmosphere when cosmic rays collide with air molecules. *Id.* Naturally occurring tritium is found in trace amounts in groundwater worldwide. *Id.*

Based upon information from the Braidwood station, the background level for tritium is 35 pCi/L. However, in commercial, State, and private laboratories (other than research laboratories), the lowest amount of tritium that can be practically detected is 200 pCi/L. That is why the reporting levels for this rule are 200 pCi/L. PC 2 at 3. The quantity of 0.002 Ci as another reporting requirement is a practical level. Exelon's staff is familiar with this level and it can be determined without analytical testing. PC 2 at 4. Releases of quantities of less than 0.002

Ci are not expected to result in concentrations of 200 pCi/L of tritium or more outside the licensee controlled area. *Id.*

These provisions of the rules are uniform across all contaminant sources and all geographic areas within the State. PC 2 at 4. These provisions do not apply outside Illinois, nor do they make special provision for alert and abatement standards and procedures respecting occurrences, emergencies of pollution or other short-term conditions constituting an acute danger to health or the environment, or regulations specific to individual persons or sites. PC 2 at 4-5.

DISCUSSION

Section 13.6 of the Act (415 ILCS 5/13.6 (2006)) was enacted by P.A. 94-849 and amended by P.A. 95-066 (eff. Aug. 13, 2007). Section 13.6 regulates the release of radionuclides and requires detection and reporting of unpermitted releases. 415 ILCS 5/13.6(a) (2006). Unpermitted releases must be reported to the Agency and IEMA within 24 hours. 415 ILCS 5/13.6(b) (2006). Under Section 13.6, the Agency was required to propose rules to the Board prescribing standards for detecting and reporting of unpermitted releases. The Agency fulfilled the statutory obligation by proposing these rules to the Board. In addition, Section 13.6 of the Act (415 ILCS 5/13.6 (2006)) requires the Board to adopt the rules within one year of the Agency's proposal being filed. The Board proceeded to first notice on December 6, 2007, to ensure the timely adoption of the proposed rules. Today the Board proceeds to second notice to further ensure the timely adoption of the proposed rules.

The Board found at first notice that based on the record before the Board, the rules are economically reasonable and technically feasible. In addition, the Board found that the proposed rules will be protective of the environment and human health. As stated previously, the Board has received no additional public comment on this rulemaking. Thus, the Board has no additional evidence in the record that would impact the Board's prior findings. The Board therefore finds that proceeding to second notice with the rule as proposed at first notice is warranted. Thus, the Board adopts the rule for second notice.

ORDER

The Board directs the Clerk to cause the filing of the following rule for second notice with the Joint Committee on Administrative Rules.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE I: ATOMIC RADIATION
CHAPTER I: POLLUTION CONTROL BOARD

PART 1010
PROCEDURES FOR REPORTING RELEASES OF RADIONUCLIDES AT NUCLEAR
POWER PLANTS

SUBPART A: GENERAL PROVISIONS

Section	
1010.100	Purpose
1010.102	Applicability
1010.104	Scope
1010.106	Definitions
1010.108	Severability

SUBPART B: REPORTING

1010.200	Evaluation of Releases
1010.202	Reporting of Releases
1010.204	Follow-up Written Report

AUTHORITY: Implementing and authorized by Sections 13.6 and 27 of the Environmental Protection Act [415 ILCS 5/13.6 and 27].

SOURCE: Adopted at 32 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL PROVISIONS

Section 1010.100 Purpose

This Part prescribes standards for detecting and reporting unpermitted releases of radionuclides from nuclear power plants pursuant to Section 13.6 of the Illinois Environmental Protection Act [415 ILCS 5/13.6].

Section 1010.102 Applicability

This Part applies to licensees of nuclear power plants that are required under Section 13.6 of the Act to report an unpermitted release of a radionuclide.

Section 1010.104 Scope

This Part sets forth the procedures licensees of nuclear power plants must follow to satisfy their obligation under Section 13.6 of the Act to report unpermitted releases of radionuclides to the Agency and to IEMA. This Part addresses only the reporting of unpermitted releases of radionuclides required under Section 13.6 of the Act. The requirements of this Part are independent of, and do not replace or supersede, any other reporting requirements in State or federal law or regulation. This Part does not prevent or preclude licensees from reporting releases of radionuclides that are not required to be reported under Section 13.6 of the Act.

Section 1010.106 Definitions

Except as stated in this Section, or unless a different meaning of a word or term is clear from the context, the definition of words or terms in this Part shall be the same as that applied to the same words or terms in the Illinois Environmental Protection Act.

“Act” means the Illinois Environmental Protection Act [415 ILCS 5].

“Agency” means the Illinois Environmental Protection Agency.

“Curie” or “Ci” means the quantity of radioactive material producing 37 billion nuclear transformations per second.

"Groundwater" means underground water that occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal to or greater than atmospheric pressure. [415 ILCS 5/3.64]

“IEMA” means the Illinois Emergency Management Agency.

“L” means liter.

“Licensee” means the holder of a license issued for a nuclear power plant under chapter I of title 10 of the Code of Federal Regulations.

“Licensee controlled area” means the land or property that is owned, leased, or otherwise controlled by the licensee.

“Picocurie” or “pCi” means the quantity of radioactive material producing 2.22 nuclear transformations per minute. One pCi is one trillionth (10^{-12}) of one curie.

"Person" is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, State agency, or any other legal entity, or their legal representative, agent, or assigns. [415 ILCS 5/3.315]

“Station generated liquids” means liquids used in, or as a part of, the power generation process at a nuclear power plant and that contain, or potentially could contain, radionuclides.

“Surface water” means all water that is open to the atmosphere and subject to surface runoff.

“Unpermitted release of a radionuclide” means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing of a radionuclide into groundwater, surface water, or soil that is not permitted under State or federal law or regulation. [415 ILCS 5/13.6(c)]. “Unpermitted release of a radionuclide” does not include the discharge of a radionuclide from a point source at a designated process water or cooling water outfall identified in the nuclear power plant’s National Pollutant Discharge Elimination System permit, provided the discharge is authorized in the nuclear power plant’s United States Nuclear Regulatory Commission operating license.

1010.108 Severability

If any provision in this Part or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of this Part as a whole or of any portion not adjudged invalid.

SUBPART B: REPORTING

Section 1010.200 Evaluation of Releases

Within 24 hours after an unpermitted release of a radionuclide from a nuclear power plant into groundwater, surface water, or soil, the licensee must evaluate the release in accordance with this Section to determine whether it must be reported. The evaluation cannot take into account remedial actions taken in response to the release (i.e., the evaluation must be based on the volumes of station generated liquids and concentrations or quantities of radionuclides released, not on the volumes of station generated liquids and concentrations or quantities of radionuclides remaining after the initiation or completion of response actions). If the release is required to be reported, the licensee must report the release in accordance with Section 1010.202 of this Part.

- a) Licensees must report unpermitted releases of station generated liquids that result in tritium concentrations of 200 pCi/L or more outside of the licensee controlled area.
- b) Licensees must report unpermitted releases of station generated liquids that contain tritium at quantities of 0.002 Curies or more.

Section 1010.202 Reporting of Releases

- a) Reports required under Section 1010.200 must be given within 24 hours after the release to both the Agency and IEMA in accordance with the following:
 - 1) Reports to the Agency must be given by telephone and electronically. The Agency's telephone number for reporting environmental emergencies is 1-217-782-3637.
 - 2) Reports to IEMA must be given by telephone and electronically. IEMA's telephone number for reporting emergencies is 1-800-782-7860, or, if calling from outside Illinois, 1-217-782-7860.
 - 3) Electronic reports must be submitted on forms and in a format prescribed by the Agency, and must be submitted to addresses prescribed by the Agency and IEMA. The Agency shall consult with IEMA in developing the forms and format for electronic reports required under this Section.

- b) Reports required under Section 1010.200 must include, at a minimum, the following information using the best data available at the time of the report:
- 1) The name and address of the nuclear power plant where the release occurred;
 - 2) The name, signature, and telephone number of the Principal Executive Officer for the nuclear power plant or the Principal Executive Officer's authorized agent;
 - 3) The specific location of the release;
 - 4) The time and duration of the release;
 - 5) An estimate of the volume and radionuclide concentrations (in pCi/L) of station generated liquids released, and an estimate of the flow rate if the release is ongoing;
 - 6) Identification of the radionuclides released and an estimate of the quantities released (in Curies);
 - 7) Whether the release was to groundwater, surface water, or soil, and a description of the area into which the release occurred (e.g., field, ditch, stream, or other description) and the size of the area affected;
 - 8) The actions taken to respond to, contain, and mitigate the release;
 - 9) The known and anticipated impacts to human health and the environment, including but not limited to groundwater and surface water resources, as a result of the release;
 - 10) The names, addresses, and telephone numbers of persons at the nuclear power plant who may be contacted for further information regarding the release; and
 - 11) The name and mailing address of the licensee of the nuclear power plant.
- c) The Agency must post copies of the electronic reports it receives under this Section on the Agency's website.

Section 1010.204 Follow-up Written Report

An owner or operator who reports a release under this Part must provide to the Agency and to IEMA a follow-up written report of the release within five business days after reporting the release.

- a) The follow-up report must confirm and update the information provided by the licensee under Section 1010.202 utilizing the best data available and must also include the following information:
- 1) Copies of all lab analyses used to confirm the presence of, or conducted in response to, the release if lab analyses have been conducted;
 - 2) Plan view and, if available, geological cross-section maps showing, at a minimum, the location of the release, the locations of samples taken to confirm the release if samples have been taken, the locations of samples taken in response to the release if samples have been taken, the measured and modeled extents of the release if known, the groundwater flow direction if known, groundwater contours if known, the boundary of the licensee controlled area, and structures, roads, and other surface features;
 - 3) An estimate of the volume and radionuclide concentrations (in pCi/L) of station generated liquids released but not recovered;
 - 4) An estimate of the quantities (in Curies) of radionuclides released but not recovered;
 - 5) An updated description of activities taken in response to the release;
 - 6) If additional activities in response to the release are planned, a description of those activities; and
 - 7) The name and signature of the Principal Executive Officer for the nuclear power plant or the Principal Executive Officer's authorized agent.
- b) The follow-up report must be submitted electronically on forms and in a format prescribed by the Agency and must be submitted to addresses prescribed by the Agency and IEMA. Within five business days after submission of the electronic follow-up report, hard copies of the follow-up report must be submitted to the Agency and IEMA at the following addresses:

Illinois Environmental Protection Agency
Bureau of Water
Groundwater Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Il 62794-9276

Illinois Emergency Management Agency
Division of Nuclear Safety
Bureau of Environmental Safety
1035 Outer Park Drive

Springfield, Il 62704

The Agency shall consult with IEMA in developing the forms and format for reports required under this Section.

- c) The Agency must post copies of the follow-up reports it receives under this Section on the Agency's website.

IT IS SO ORDERED

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on March 6, 2008, by a vote of 4-0.



John T. Therriault, Assistant Clerk
Illinois Pollution Control Board