

ILLINOIS POLLUTION CONTROL BOARD
February 4, 2021

IN THE MATTER OF:)
)
STANDARDS FOR THE DISPOSAL OF) R20-19
COAL COMBUSTION RESIDUALS IN) (Rulemaking - Land)
SURFACE IMPOUNDMENTS: PROPOSED)
NEW 35 ILL. ADM. CODE 845)

Proposed Rule. Second Notice.

OPINION AND ORDER OF THE BOARD (by B.F. Currie):

On March 30, 2020, the Illinois Environmental Protection Agency (IEPA or Agency) proposed that the Board adopt new rules entitled “Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments.” On final adoption, the new rules will govern the disposal of coal combustion residual or “CCR,” commonly called “coal ash,” which is generated by coal-fired power plants. These rules—to be housed in new Part 845 of the Illinois Administrative Code’s Title 35—will establish a comprehensive State permitting program to regulate all aspects of CCR surface impoundments, including location, design, construction, operation, closure, post-closure, financial assurance, and remediation. Among the program’s primary goals is protecting groundwater from contamination by CCR pollutants leaking from surface impoundments. The Board today proposes the rules for second-notice review by the Joint Committee on Administrative Rules (JCAR).

In 2019, the General Assembly passed and Governor JB Pritzker signed into law Public Act 101-171, the Coal Ash Pollution Prevention Act, which directly addressed CCR surface impoundments. The legislation added Section 22.59 to the Illinois Environmental Protection Act (Act), 415 ILCS 5/22.59, mandating this rulemaking. In Section 22.59, the General Assembly found that “CCR generated by the electric generating industry has caused groundwater contamination and other forms of pollution at active and inactive plants throughout this State” and that “environmental laws should be supplemented to ensure consistent, responsible regulation of all existing CCR surface impoundments.” 415 ILCS 22.59(a)(3), (a)(4). The General Assembly additionally found that:

Meaningful participation of State residents, especially vulnerable populations who may be affected by regulatory actions, is critical to ensure that environmental justice considerations are incorporated in the development of, decision-making related to, and implementation of environmental laws and rulemaking that protects and improves the well-being of communities in this State that bear disproportionate burdens imposed by environmental pollution. 415 ILCS 5/22.59(a)(5).

To aid in addressing these concerns, Section 22.59 requires that IEPA propose and the Board adopt new rules on CCR surface impoundments. 415 ILCS 5/22.59(g). Under Section 22.59,

IEPA timely filed a rulemaking proposal and the Board now must adopt final rules by March 30, 2021. *Id.*

At second notice, the Board moves forward with Part 845 largely as proposed by IEPA. There are, however, seven issues on which the Board's rules today substantially deviates from IEPA's proposal. First, the Board adds floodplains as a location restriction for CCR surface impoundments. Second, in fulfilling the Coal Ash Pollution Prevention Act's mandate to provide "meaningful public participation," the Board requires that owners or operators submit plans and assessments with their permit applications—and post specified documentation on their websites 30 days before public meetings, rather than 14 days. Third, the public is now allowed to submit comments to IEPA during the "alternative source determination" process. Fourth, the Board strengthens the notice and content requirements for public meetings. Fifth, the time period for the public to view permit applications is increased from 30 days to 45 days. Sixth, satisfying the statutory mandate to ensure that vulnerable populations can meaningfully participate in the permit process, the Board includes provisions on translating public notices and having translation services at public meetings. Seventh, to comply with the mandate that these rules protect communities that disproportionately bear pollution burdens, the Board requires that owners or operators analyze transportation alternatives—such as rail, barge, and low-polluting trucks—when considering closure alternatives.

Additionally, based on testimony and comment from participants, including members of the public, the Board opens a sub-docket to explore four subjects in greater detail: (1) historic, unconsolidated coal ash fill in the State; (2) the use of temporary storage piles of coal ash, including time and volume limits; (3) fugitive dust monitoring plans for areas neighboring CCR surface impoundments; and (4) the use of additional environmental justice screening tools. For each of these four subjects, the Board seeks more information and evidence, as well as proposed rules to consider.

In this opinion, the Board begins by providing general factual and legal background on CCR surface impoundments. Next, the Board describes this rulemaking's procedural history and decides pending motions, after which the Board covers the statutory directives for these rules. The Board then discusses each subpart of proposed Part 845, addressing—subpart-by-subpart—each issue raised at hearing or in public comment. After its conclusion, the Board's order directs the Clerk to submit new Part 845 for JCAR's second-notice review and to open a sub-docket for the Board's further examination of the four subjects described above. Finally, the Board sets forth the proposed rules in the addendum to its order.

GENERAL FACTUAL BACKGROUND

CCR is not one homogeneous product, but rather a broad term that captures four types of materials that are created when coal is burned at power plants to produce electricity. 415 ILCS 5/ 3.140. Those products include; fly ash, bottom ash, boiler slag, flue gas, and fluid bed boiler desulfurization by-products. *Id.* These components are created at different steps in the electricity-generating process. For example, when coal is burned in boilers, fly ash is removed from the exhaust gases by filtration equipment before it reaches the chimneys. IEPA Statement of Reasons (SR) at 2 (filed Mar. 30, 2020). Bottom ash falls to the bottom of the boiler's

combustion chamber. *Id.* Boiler slag is molten bottom ash that has been cooled with water. *Id.* Flue gas desulfurization material is a by-product of removing sulfur dioxide from the plant's air emissions. *Id.*

CCR's chemical constituents can vary based on the specific type of coal used at the plant, but they may include some or all the following elements: arsenic, beryllium, boron, cadmium, chromium, hexavalent chromium, cobalt, lead, manganese, mercury, selenium, thallium, and vanadium, as well as others. SR at 3. The presence of these contaminants poses a threat to groundwater that surrounds the power plants. 415 ILCS 5/22.59(a)(3). IEPA has identified 23 power plants in Illinois that have used coal as a fuel source and could be affected by these new rules. SR at 5.

When CCR is created at coal-fired power plants, it can be handled through either a wet or dry system. SR at 2. While wet systems involve transporting wet material by pipe to a surface impoundment near the power plant, dry CCR is disposed of in a landfill. *Id.* Usually, a CCR surface impoundment (CCRSI) system includes one or more impoundments; the first serves as the primary cell where most of the solid particles settle out of the wastewater. SR at 2-3. The CCRSI system may include additional impoundments called "polishing ponds" for removing very fine suspended particles. The impoundments may have a constructed liner, which allows CCR to be removed using heavy equipment. SR at 3

CCR surface impoundments are an environmental concern. 415 ILCS 5/22.59(a)(3) (2018). In December 2008, a dike ruptured at the Kingston Fossil Plant in Kingston Tennessee, releasing approximately 1.1 billion gallons of CCR into the adjacent Emory River. SR at 4. Following this release, the United States Environmental Protection Agency (USEPA) began developing rules for coal ash ponds and coal ash landfills. *Id.* At the 23 coal-fired plants in the State, IEPA has identified 73 that it considers surface impoundments. SR at 3. Some of these surface impoundments have liners made of impermeable material but most remain unlined. *Id.* Unlined surface impoundments risk allowing contaminants to leach from CCR into the groundwater, affecting the groundwater's potential use. SR at 4. In Illinois, CCR has caused groundwater contamination and other forms of pollution that are harmful to human health and the environment. 415 ILCS 5/22.59(a)(3) (2018).

After identifying facilities with CCR surface impoundments, IEPA gathered information from these facilities that included groundwater monitoring well data, potable water system surveys, and hydrogeologic site assessments. SR at 4. "The information gathered under [IEPA's] ash impoundment strategy showed that 14 facilities had violations of the numerical groundwater quality standards on-site." *Id.*

GENERAL LEGAL BACKGROUND

Historically, IEPA regulated CCR surface impoundments as wastewater treatment units under the National Pollutant Discharge Elimination System (NPDES) permit program, or as a state operating permit issued under Section 12(b) of the Act (415 ILCS 5/12(b) (2018)). SR at 4. Regulating CCR became a national priority after the Kingston dike rupture. USEPA began developing rules for coal ash ponds and CCR landfills, first under the Resource Conservation

and Recovery Act (RCRA). *Id.* In response, IEPA developed a coal ash impoundment strategy that required groundwater monitoring at all power plants in Illinois that used coal as a fuel source. *Id.* After the Board issued a site-specific rule for the closure of a surface impoundment at the Ameren Hutsonville Power Station, IEPA developed a rule of general applicability for all coal ash impoundments located at power plants. *See Ameren (Hutsonville Power Station)*, R09-21 (Jan. 20, 2011); Coal Combustion Waste Ash Ponds and Surface Impoundments at Power Generating Facilities, R14-10. During the Board's R14-10 rulemaking, USEPA issued a final rule on CCR at 40 C.F.R. Part 257, Subpart D. 80 Fed. Reg. 21302 (April 17, 2015).

USEPA's Part 257 was appealed by both environmental groups and industrial groups to the U.S. Court of Appeals for the D.C. Circuit, resulting in Utility Solid Waste Activities Group v. Environmental Protection Agency, 901 F.3d 414, judgment entered (D.C. Cir. Aug. 21, 2018) (referred to as "USWAG decision"). In June of 2016, the Court granted USEPA's unopposed motion to remand to itself several provisions of the Final Rule that were not at issue in the case and that USEPA had decided to vacate. *Id.* at 425. The case resumed thereafter. *Id.* Also in 2016, the Water Infrastructure Improvements for the Nation Act (WIIN Act) was enacted, requiring USEPA to develop a federal permitting program for CCR surface impoundments. WIIN Act; P.L. 114-322 (Dec. 16, 2016). The WIIN Act also provided for state program delegation if the state's program was at least as stringent as the federal rule. *Id.* at Section 2301.

The 2018 USWAG decision expanded the scope of the federal rule, finding that USEPA acted arbitrarily and capriciously when it exempted legacy ponds. 901 F.3d at 449. The D.C. Circuit Court held that USEPA acted contrary to RCRA by failing to require the closure of unlined CCR surface impoundments and by classifying "clay-lined" CCR surface impoundments as lined. *Id.* The court therefore vacated the provisions that allowed unlined impoundments to continue receiving CCR unless they were leaking. *Id.* The court remanded three provisions of the rule back to USEPA and the decision was not appealed. *Id.* at 450.

In Illinois, Public Act 101-171 was signed into law by Governor Pritzker on July 30, 2019, adding Section 22.59 to the Act. The purpose of Section 22.59 is "to promote a healthful environment, including clean water, air, and land, meaningful public involvement, and the responsible disposal and storage of coal combustion residuals, so as to protect public health and to prevent pollution of the environment of this State." 415 ILCS 5/22.59(a).

Section 22.59 requires the Board to adopt rules "establishing construction permit requirements, operating permit requirements, design standards, reporting, financial assurance, and closure and post-closure care requirements for CCR surface impoundments." 415 ILCS 5/22.59(g). The term "surface impoundment" is defined as a man-made or natural pit that is designed to hold accumulations of CCR and liquids, and that treats, stores, or disposes of CCR. 415 ILCS 5/3.143. Section 22.59 also required that IEPA propose CCR rules to the Board within eight months after the July 30, 2019 effective date of Public Act 101-171. IEPA timely filed its rulemaking proposal on March 30, 2020. In turn, Section 22.59 requires the Board to adopt final rules within one year after receiving IEPA's proposal, *i.e.*, by March 30, 2021.

These new rules will create a permitting program and establish the process for location, design, operation, as well as safely closing CCR surface impoundments, minimizing threats to

human health and the environment. The rules are based on USEPA's rules in Subpart D of Part 257. Illinois' rules must be at least as stringent as those federal rules but may in fact be more stringent. SR at 8. At the 23 coal-fired plants in the State, IEPA has identified 73 surface impoundments that it considers could be affected by the rules it proposed. IEPA determined that up to six of the 73 surface impoundments have liners that comply with the federal liner standards. The Board's second-notice rules will regulate those 73 surface impoundments described in IEPA's original rulemaking proposal, as well as any new or retrofitted surface impoundments in the State.

IEPA described its objectives in creating Part 845's expansive new permitting and regulatory structure. SR at 9-13. The primary purpose is to fulfill IEPA's statutory obligation to propose CCR surface impoundment rules that are consistent with the Section 22.59(g) mandate. SR at 10. For the new rules, Section 22.59(g) imposes 11 broad requirements (415 ILCS 5/22.59(g)), listed below. The second purpose of the new rules is to protect the groundwater within the State of Illinois. "Groundwater has an essential and pervasive role in the social and economic well-being of Illinois, and is important to the vitality, health, safety, and welfare of its citizens." SR at 10. The third purpose is to adopt the federal rules in Illinois, ensure that proposed rules are at least as stringent as the federal rule, and obtain federal approval of Illinois' CCR surface impoundment program. *Id.* The fourth purpose of the new rules is to adopt procedures to ensure CCR surface impoundments are closed in an environmentally protective way. SR at 11. The fifth purpose is to ensure meaningful public participation. *Id.* IEPA "believes early and sustained public participation is vital to assisting owners and operators in developing corrective action and closure plans that account for impacts to individuals living in communities where CCR will be generated, handled, transported and disposed." SR at 11-12. The sixth purpose of the new rules is to provide clear permitting requirements and procedures for new CCR surface impoundments and for modifying, retrofitting, or closing existing CCR surface impoundments. SR at 12. Lastly, the seventh purpose of the new Part 845 is to ensure owners and operators provide adequate financial assurance for completing closure, post-closure care, and remediation of releases. SR at 13.

PROCEDURAL BACKGROUND

Proposal

IEPA filed proposed rules and its supporting Statement of Reasons on March 30, 2020. IEPA's proposed new Part 845 comprises 67 individual sections. On April 16, 2020, the Board accepted IEPA's rulemaking proposal for hearing. Due to the statutory deadline for adopting final rules, the Board proceeded to first notice without commenting on the substantive merits of IEPA's proposal. The Secretary of State published the proposed first-notice rules in the *Illinois Register* on May 1, 2020. 44 Ill. Reg. 6696 (May 1, 2020).

Hearings

The Board held two sets of hearings in this rulemaking. The first set of hearings lasted for four days, three of which were in Springfield, with the fourth in Chicago. Those dates were:

August 11, 12, 13, and 25, 2020. The second set of hearings was held in Chicago and lasted for two days, September 29 and 30, 2020.¹

Due to the ongoing COVID-19 pandemic, and in compliance with Governor Pritzker's emergency orders, all social distancing and masking measures were implemented at the physical hearing locations. To allow for remote participation in the hearings, the Board added WebEx video and telephone for every hearing date.

Participants at the hearings included: (1) IEPA; (2) Environmental Law and Policy Center, Prairie Rivers Network, Sierra Club, and Little Village Environmental Justice Organization (collectively, Environmental Groups); (3) Midwest Generation, LLC (Midwest Generation); (4) City of Springfield, Office of Public Utilities, d/b/a City Water Light and Power (CWLP); (5) Dynegy Midwest Generation, LLC, Electric Energy Inc., Illinois Power Generating Company, Illinois Power Resources Generating, LLC, and Kincaid Generation, LLC (collectively, Dynegy); (6) Illinois Environmental Regulatory Group (IERG); (7) AmerenEnergy Medina Valley Cogen, LLC and Union Electric Company, d/b/a/ Ameren Missouri (collectively, Ameren); and (8) the Office of the Illinois Attorney General (AGO).

The first set of hearings focused on IEPA's testimony. Witnesses testify under oath and are subject to cross examination. Eight witnesses testified on behalf of IEPA: William Buscher, manager of the Hydrogeology and Compliance Unit; Lynn Dunaway, Environmental Protection Specialist IV; Amy Zimmer, Environmental Protection Geologist III; Darin LeCrone, manager of the Industrial Unit; Lauren Martin, Environmental Protection Geologist I; Chris Pressnall, Environmental Justice Coordinator; Bob Mathis, Accountant Advanced; and Melinda Shaw, Environmental Protection Geologist I.

The second set of hearings focused on testimony for the Environmental Groups and industry. Six witnesses testified on behalf of the Environmental Groups: Dulce Ortiz, volunteer, Clean Power Lake County; Mark Hutson, registered Professional Geologist, Principal/Senior Scientist of Geo-Hydro, Inc.; Andrew Rehn, water resources engineer, Prairie Rivers Network; Scott Payne, registered Professional Geologist, Principal KirK Engineering & Natural Resources, Inc.; Ian Magruder, Senior Hydrogeologist, KirK Engineering & Natural Resources, Inc.; and Jo Lakota, Illinois resident.

Seven witnesses testified on behalf of Dynegy: Cynthia Vodopivec, Vice President, Environmental Health and Safety, Dynegy Midwest Generation; Lisa Bradley, Principal Toxicologist, Haley & Aldrich, Inc.; Melinda Hahn, Senior Managing Consultant, Ramboll Environ, Inc.; Rudolph Bonaparte, registered Professional Engineer, Senior Principal, Geosyntec Consultants, Inc.; David Hagen, Principal Consultant, Haley & Aldrich, Inc.; Andrew Bittner, registered Professional Engineer, Principal, Gradient; and Mark Rokoff, registered Professional Engineer, Senior Vice President, AECOM. Three witnesses testified on behalf of Midwest Generation: Sharene Shealy, Senior Environmental Manager of NRG Energy, Inc.; Richard

¹ The Board cites the transcript of each hearing day as "Tr. 1" for August 11 ; "Tr. 2" for August 12; "Tr. 3" for August 13; "Tr. 4" for August 25; "Tr. 5" for September 29; and "Tr. 6" for September 30.

Gnat, registered Professional Geologist, Principal of KPRG and Associates, Inc.; and David Nielson, licensed Professional Engineer, Senior Consultant and Manager of Sargent & Lundy LLC. Finally, two witnesses testified on behalf of Ameren: Gary King, Arcadis U.S.; and Michael Wagstaff, licensed Professional Engineer, Ameren Corporation.

During the hearings, 58 exhibits were introduced and admitted.

Public Comments

In rulemakings, the Board gives equal weight to oral public comments and written public comments. The Board received both types of public comments in this proceeding.

In conjunction with the two sets of hearings, the Board held four sessions for oral public comments. Two sessions were held in the evening and two during the lunch hour to encourage maximum participation. The public comment sessions were held on August 12 and 13, September 30, and October 1, 2020.² Oral public comments are not given under oath nor are they subject to cross-examination.

In all, 120 members of the public provided oral public comments. Only one member of the public appeared in person to give comment; the remainder were given by WebEx video or telephone. Spanish-language interpretation was requested by Prairie Rivers Network and an interpreter translated oral Spanish comments to English for the court reporter to transcribe.

One hundred and thirty-eight written public comments were filed.³ The Board accepted written public comments until the record closed on November 6, 2020.⁴ Hearing Officer Order, R20-19 (Oct. 20, 2020). A spreadsheet detailing every comment from a member of the public is attached to this order as Appendix B. However, on November 24, 2020, the Environmental Groups filed “Supplemental Post Hearing Comments” (PC 140), moving the Board to consider two recent developments. Dynegy and Midwest Generation jointly moved to strike the late-filed comment on November 30, 2020. By order of December 8, 2020, the hearing officer granted the Environmental Groups’ motion to prevent material prejudice, denied the joint motion to strike, and allowed participants until December 15, 2020, to file comments responsive to the Environmental Groups’ comment. Hearing Officer Order, R20-19 (Dec. 8, 2020). On December 15, 2020, both IEPA and Ameren responded substantively to the Environmental Groups’ PC 140.

² The Board cites the transcript of each public comment session as “Tr. 2 PC” for August 12; “Tr. 3 PC” for August 13; “Tr. 6” for September 30; and “Tr. 7” for October 1.

³ Dale Griffin filed a public comment (PC 139) on November 10, 2020. Because it was filed late, the Board does not consider Mr. Griffin’s public comment (35 Ill. Adm. Code 102.108(d)), but observes that the substance of its two sentences—asking that the rules be made protective due to concerns over the effects of coal ash disposal on nearby people and Illinois waters—is amply expressed elsewhere in the record.

⁴ Written public comments are numbered consecutively in the order in which they were filed. The Board cites them as “PC #”.

On January 14, 2021, the Office of the Illinois Attorney General filed a public comment, attaching a court order from the Circuit Court of Sangamon County. The court order dismissed with prejudice a case in which Ameren filed an action for declaratory judgment against IEPA concerning several of Ameren's CCR surface impoundments. On January 15, 2021, Ameren filed a public comment, responding to the Attorney General's filing.

Both comments are untimely as this rulemaking's record closed on November 6, 2020. Additionally, as Part 845 is a rule of general applicability, discussion of specific, ongoing legal actions between and amongst the participants is not relevant to the record. The Board considers neither late-filed public comment.

Economic Impact Study

As required by Section 27(b) of the Act (415 ILCS 5/27(b) (2018)), the Board requested in a letter dated April 16, 2017, that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study (EcIS) of the proposed rules. The Board requested that DCEO determine by June 1, 2020, whether it would conduct an EcIS. The Board received no response to this request. No one at hearing testified or commented on the Board's request or DCEO's lack of response. Hearing notices were published in the *Springfield Journal-Register* and the *Chicago Sun Times* on both May 28 and July 17, 2020.

Outstanding Motions

Under the Board's procedural rules, a motion to correct a hearing transcript may be filed within 21 days after the Board receives the transcript. 35 Ill. Adm. Code 101.604. If a participant fails to timely file a motion to correct the transcript, the participant waives the right to correct, unless material prejudice would result. *Id.* The Board received six motions to correct hearing transcripts.

First, on September 8, 2020, Dynegy filed a motion to correct the August 11 and 12, 2020 transcripts. The Board received those transcripts on August 17 and 20, 2020, respectively. As the 21-day deadline for filing the motion concerning the first transcript fell on the legal holiday of Labor Day, September 7, 2020, the deadline automatically extended to September 8, 2020 (35 Ill. Adm. Code 101.300(a)), making Dynegy's motion timely. Second, on September 11, 2020, Dynegy timely filed a motion to correct the August 13, 2020 transcript.

Third, on September 17, 2020, IEPA filed a motion to correct the August 11, 12, 13, and 25, 2020 transcripts, which the Board received on August 17, 20, and 21, 2020 and September 3, 2020, respectively. IEPA's motion was timely for the last transcript but untimely for the first three transcripts. The Board finds, however, that IEPA has not waived the right to correct the first three transcripts. Nearly all IEPA's requested corrections were substantive and, therefore, material prejudice would result absent correction. Finally, included in IEPA's motion was a timely response to Dynegy's two motions to correct (35 Ill. Adm. Code 101.500(d)).

The fourth motion to correct was timely filed on September 24, 2020, again by Dynegy, this time concerning the August 25, 2020 transcript. Fifth, on October 30, 2020, the

Environmental Groups timely filed a motion to correct the September 29, 2020 transcript. Sixth and finally, on November 6, 2020, Midwest Generation timely filed a motion to correct the September 30, 2020 transcript. The Board grants all the motions to correct with the following exception: the Board denies Dynegy's first two motions only as to the three items described at page six of IEPA's response. The three items concern testimony of IEPA witnesses on August 12 and 13, 2020. IEPA agrees with Dynegy that corrections are necessary but proposes alternative corrections. On its own motion, the Board corrects the August 12 and 13, 2020 transcripts concerning those three items to read as IEPA proposes on page six of its response.

STATUTORY DIRECTIVES

The Board's rules "must, at a minimum," meet these 11 criteria specified by the General Assembly in Section 22.59(g):

(g) The Board shall adopt rules establishing construction permit requirements, operating permit requirements, design standards, reporting, financial assurance, and closure and post-closure care requirements for CCR surface impoundments. Not later than 8 months after the effective date of this amendatory Act of the 101st General Assembly the Agency shall propose, and not later than one year after receipt of the Agency's proposal the Board shall adopt, rules under this Section. The rules must, at a minimum:

- (1) be at least as protective and comprehensive as the federal regulations or amendments thereto promulgated by the Administrator of the United States Environmental Protection Agency in Subpart D of 40 CFR 257 governing CCR surface impoundments;
- (2) specify the minimum contents of CCR surface impoundment construction and operating permit applications, including the closure alternatives analysis required under subsection (d);
- (3) specify which types of permits include requirements for closure, post-closure remediation and all other requirements applicable to CCR surface impoundments;
- (4) specify when permit applications for existing CCR surface impoundments must be submitted, taking into consideration whether the CCR surface impoundment must close under the RCRA;
- (5) specify standards for review and approval by the Agency of CCR surface impoundment permit applications;
- (6) specify meaningful public participation procedures for the issuance of CCR surface impoundment construction and operating permits, including, but not limited to, public notice of the submission of permit applications, an opportunity for the submission of public comments, an opportunity for a

public hearing prior to permit issuance, and a summary and response of the comments prepared by the Agency;

(7) prescribe the type and amount of the performance bonds or other securities required under subsection (f), and the conditions under which the State is entitled to collect moneys from such performance bonds or other securities;

(8) specify a procedure to identify areas of environmental justice concern in relation to CCR surface impoundments;

(9) specify a method to prioritize CCR surface impoundments required to close under RCRA if not otherwise specified by the United States Environmental Protection Agency, so that the CCR surface impoundments with the highest risk to public health and the environment, and areas of environmental justice concern are given first priority;

(10) define when complete removal of CCR is achieved and specify the standards for responsible removal of CCR from CCR surface impoundments, including, but not limited to, dust controls and the protection of adjacent surface water and groundwater; and

(11) describe the process and standards for identifying a specific alternative source of groundwater pollution when the owner or operator of the CCR surface impoundment believes that groundwater contamination on the site is not from the CCR surface impoundment. 415 ILCS 5/22.59(g).

The Board addresses these statutory directives within the following subpart-by-subpart discussion of the proposed rules.

DISCUSSION

Subpart A: General Provisions

Subpart A of Part 845 sets forth the types of facilities subject to these proposed rules and contains generally applicable provisions, such as applicability of other regulations and definitions. The Environmental Groups seek to expand the scope of Part 845 so that it encompasses historic, unconsolidated coal ash fills, and waste piles, an expansion opposed by other participants. PC 124 at 61. Alternatively, the Environmental Groups suggest the Board open a sub-docket to further develop the record on historic coal ash sites in the State. *Id.* In addition, participants propose both adding defined terms and revising first-notice definitions.

For the reasons below, the Board directs the Clerk to open a sub-docket on the issue of coal ash fill not in surface impoundments. The Board also adds a definition of “1000-year flood but otherwise leaves the definition section unchanged. Finally, the Board deletes the floodplains

requirement under Section 845.110(b)(1) and renumbers the remaining subsections because the Board is adding floodplains as a location restriction under Subpart C.

Scope

Part 845's scope is dictated by the General Assembly's mandate to the Board in Section 22.59 (415 ILCS 5/22.59). Section 22.59(g) directs the Board to adopt rules for "CCR surface impoundments"—a term defined in the Act—using USEPA's Part 257 as a baseline. 415 ILCS 5/22.59(g). The term is defined as follows:

"CCR surface impoundments" means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores or disposes of CCR." 415 ILCS 5/3.143.

Little Village Environmental Justice Organization argues that excluding sites that have unconsolidated CCR appears contrary to the intent of Section 22.59:

Absent a fundamental reworking of [IEPA's] regulatory proposal, site characterized by unconsolidated CCR fill will not be identified, appropriately assessed or properly remediated. They will remain as they are indefinitely Leaving these CCR deposits behind is contrary to the purpose of the Coal Ash Pollution Prevention Act and its plain language mandates. PC 3 at 5, 6.

The Environmental Groups argue that CCR landfills and piles, like CCR surface impoundments, are contaminating groundwater and surface waters and harming communities. PC 124 at 50.

Existing regulations do not adequately protect against pollution from CCR landfills and piles. The Board has authority to regulate such landfills and piles. Accordingly, to achieve the purposes of the Illinois Environmental Protection Act, the Board should adopt rules directing owners and operators of CCR landfills to put in place much-needed safeguards at those landfills, and where necessary, close them safely. PC 124 at 50.

The Environmental Groups urge the Board to critically review these historic sites. The Environmental Groups point to evidence that these sites have the potential to cause groundwater contamination. *Id.* Additionally, the Environmental Groups cite concern that many of these sites may be unlined. *Id.* The Environmental Groups point to two existing sites where coal ash fill is intermixed with soil and potentially contaminating groundwater. PC 3 at 5, PC 124 at 60. The Environmental Groups argue that "some of these sites are known, but there are very likely many that are unknown." *Id.* at 60. Additionally, many oral and written public comments support expanding the rules to address all places where coal ash has been stored or abandoned. PC 54, 79, 80, 97, Exh. 12 and 40.

IEPA, however, sees the scope of this rulemaking limited to CCR surface impoundments. PC 120 at 9. "As provided in the [Statement of Reasons], the foremost purpose and effect of the

Agency proposing Part 845 is to fulfill its statutory obligation to propose rules for CCR surface impoundments consistent with the requirements of Section 22.59(g) of the Act.” *Id.*

CWLP opposes expanding the rulemaking’s scope to include unconsolidated ash, stating that such a “significant expansion” would be “inappropriate” during an “expedited rulemaking with a statutory decision deadline mandate.” PC 122 at 3. Further, CWLP argues “[i]t would be inappropriate and reckless to rush through an expansion of the rule beyond areas that have been vetted by the legislature and the Agency stakeholder process in this rulemaking docket.” *Id.* Dynegy also opposes the requested expansion. “As a result of the statutory mandate and the limited scope of IEPA’s proposal, the record before the Board lacks sufficient evidence for the regulation of landfills or CCR fill areas.” PC 137 at 19. Dynegy also objects to creating a sub-docket, arguing that because the Environmental Groups proposed no rulemaking language on this issue, severing the docket would be inappropriate. *Id.* at 20-21.

If the Board declines to broaden the rulemaking’s scope to “cover coal ash fill, landfills and piles,” the Environmental Groups suggest opening a sub-docket to explore the issue further. PC 124 at 61. “The unique circumstances of these sites, however, strongly suggest that they would be more appropriately addressed under a new set of regulations tailored to the circumstances.” PC 124 at 59. The Environmental Groups argue that the Board “has the authority to do so under 35 Ill. Adm. Code 101.408 and has severed dockets many times previously.” *Id.* CWLP also supports creating a sub-docket as an alternative to addressing fill sites in this rulemaking: “The Board has broad rulemaking authority to consider such issues in appropriate dockets if it so chooses. However, the Board has been given a narrow window by the legislature to accomplish an already very significant and difficult task of establishing a comprehensive State permitting program for CCR surface impoundments.” PC 122 at 3.

Board Findings. The Board recognizes the current threat to Illinois’ environment posed by historic, unconsolidated ash fills, piles, including temporary accumulations. As described by the Environmental Groups, these ash piles have not been systematically cataloged by IEPA or any other state agency. PC 124 at 60. These unconsolidated coal ash piles do not fit the definition of “CCR surface impoundments” and would therefore not be regulated by the framework of Part 845, nor were they included in the mandate of Section 22.59(g). Due to the expedited nature of this rulemaking, the Board does not now have enough information regarding unconsolidated ash coal fills and piles to develop appropriate rules. A more substantial record is required.

The Board finds that regulation of these unconsolidated coal ash fills and piles is beyond the scope of Section 22.59(g) and therefore, on its own motion, directs the Clerk to open a sub-docket to explore the subject in detail using the Board’s rulemaking authority under Sections 13(a) and 22(b) of the Act (415 ILCS 5/13(a), 22(b) (2018)).

Part 845’s Applicability to Ameren’s Hutsonville Pond D

Ameren wants its Hutsonville Pond D surface impoundment to continue being subject to the site-specific rule at 35 Ill. Adm. Code 840 (“Site-Specific Closures of Coal Combustion Waste Surface Impoundments”) but not subject to Part 845—except for the Subpart I financial

assurance requirements of Part 845. PC 138 at 11. Ameren relies on Gary King, who testified that the proposed rules include duplicative and contradictory provisions. *Id.* Ameren proposes adding this sentence to Section 845.100:

Except for Subpart I, this Part does not apply to any CCR surface impoundment that is subject to 35 Ill. Adm. Code Part 840. *Id.*

IEPA objects to Ameren's proposed Section 845.100 revision. Part 840 established closure and post-closure care requirements for Hutsonville Pond D. As stated in Mr. King's testimony, Part 840 created a model that has been followed for many of the closure and post-closure care plans IEPA has approved. Exh. 55 at 21. IEPA says that Part 845 recognizes those aspects of Part 840, and therefore, establishes minimal additional criteria applicable to any inactive closed CCR surface impoundment. Exh. 2 at 142. However, unlike Part 845, financial assurance was not included in Part 840, as the legislative authority to do so was established by P.A. 101-171, the Coal Ash Pollution Prevention Act. 415 ILCS 22.59(m) (2018). Additionally, corrective action for new releases, such as from an unexpected catastrophic failure of a CCR surface impoundment in post-closure care, is required in Part 845, but is not explicitly required in Part 840. PC 120 at 54-58. The AG agrees with IEPA's argument on this issue. PC 134 at 10.

Board Findings. If Ameren believes Part 845 rules duplicate or contradict Part 840 rules, Ameren may attempt to demonstrate that before the Board by filing a site-specific rulemaking proposal to repeal portions of Part 840. Similarly, Ameren may also file a petition for an Adjusted Standard from part 845. The Board today declines to amend the proposal as suggested by Ameren.

Definitions

Section 845.120 of Subpart A contains the definitions for Part 845. Participants suggest adding two definitions ("de minimis unit" and "release") and modifying four first-notice definitions ("inactive CCR surface impoundment," "inactive closed CCR surface impoundment," "CCR storage pile," and "temporary accumulation"). In addition, the Board asked IEPA to propose a definition for the term "1000-year flood" as the term was used twice in the proposed rules but was not defined.

For the reasons below, the Board declines to add definitions of "de minimis unit" and "release," declines to change any of the five noted first-notice definitions and accepts IEPA's proposed definition of "1000-year flood."

Adding a Definition of "De Minimis Unit." Dynegy proposes adding a definition of "de minimis unit." PC 126 at 14-16. Dynegy's proposed definition is supported by Midwest Generation. PC 125 at 27. Dynegy argues that absent a definition of "de minimis," a hypothetical situation could exist where "any body of water near a coal-fired power plant could potentially become subject to the extensive requirements of Part 845 if extremely small amounts of CCR entered that waterbody indirectly." PC 216 at 15. Dynegy proposes the following new definition:

“De minimis unit” means any surface impoundment, including but not limited to process water or cooling water ponds, that only received CCR incidentally and does not contain an amount of CCR and liquid presenting a reasonable probability of adverse effects on human health or the environment. De minimis surface impoundments are not CCR surface impoundments. PC 126 at 16.

IEPA objects to this proposed definition, rejecting Dynegey’s contention that USEPA’s risk assessment makes an exemption for de minimis units. PC 129 at 5. Noting that Part 257 does not define “de minimis,” IEPA says, “USEPA has made no determinations whether any surface impoundment contains only de-minimis amounts of CCR.” *Id.* This is problematic, argues IEPA, as creating a definition has the potential for making proposed Part 845 less protective than the federal rule: “Any definition of de-minimis has the potential of being less protective or comprehensive, because USEPA has failed to define the meaning of de-minimis and does not currently operate a permit program, pursuant to which determinations of de-minimis might be made.” *Id.*

If the Board decides to add a “de minimis unit” definition, IEPA suggests following the standard of no “reasonable probability of adverse effects” found in RCRA. PC 129 at 5. In addition, IEPA explains that past operational practices must be considered in determining whether a unit is de minimis. *Id.* at 6. IEPA opposes any definition of de minimis unit that “requires the CCR present to be ‘incidental’ since how the CCR came to be present in the impoundment is insignificant compared to the fact that the CCR is there.” *Id.* IEPA therefore proposes the following alternative definition:

“De minimis unit” means any surface impoundment, including, but not limited to process water or cooling water ponds, which has not in the past and does not currently contain an amount of CCR presenting a reasonable probability of adverse effects on human health or the environment as determined by the Agency. De minimis surface impoundments are not CCR surface impoundments. *Id.* at 7.

Board Findings. The Board shares IEPA’s concerns about a “de minimis” definition. As USEPA uses no definition, the Board agrees that not creating a new definition for these rules would be more protective of human health and the environment. Regulatory relief mechanisms are available to owners and operators when they disagree with an IEPA determination concerning whether a unit is a CCR surface impoundment. In those instances, an owner or operator may seek an adjusted standard or a variance from the Board. Although the unit may contain a minimal amount of CCR, it is still the duty of IEPA and the Board to protect the environment and human health from CCR’s deleterious effects. In addition, IEPA has asserted that it will consider past operational practices of facilities in determining whether the unit can be considered a CCR surface impoundment:

The Agency does believe that past operational practices should have a bearing on whether an impoundment can be considered de-minimis. If an impoundment was operated for decades with a significant amount of CCR present, and then most of the CCR was removed so that currently there is truly de-minimis amount of CCR

present, the impacts of past operations, especially in unlined impoundments, is consequential. PC 129 at 6.

The Board agrees that adding a definition for “de minimis unit” would risk making Illinois’ rules less comprehensive than USEPA’s and leaving genuine environmental concerns unaddressed and therefore denies Dynegy’s request.

Changing the Definition of “Inactive CCR Surface Impoundment.” Dynegy proposes changes to the definition of “inactive CCR surface impoundment”: “‘Inactive surface impoundment’ means a CCR surface impoundment in which CCR was placed before but not after October 19, 2015 and still contains both CCR and liquids on or after October 19, 2015...” PC 126 at 9. PC 126 at 7. The definition in proposed Section 845.120 differs from the federal definition in 40 C.F.R. 257.53 by omitting the reference to containing “CCR and liquids.” *Id.* at 8. Dynegy argues that this omission “expanded the scope of Part 845 beyond the CCR Rule, and, more importantly, beyond the statutory mandate, by regulating units that do not fit the legislature’s definition of ‘CCR surface impoundment.’” *Id.* Dynegy proposes revising the definition to conform with that used in Part 257, arguing that “IEPA has created confusion as to whether units that did not contain liquids as of the date of the CCR Rule became effective may be regulated under Part 845.” *Id.* at 7, 9.

IEPA opposes conforming the definition with that in Part 257. PC 129 at 7. IEPA says that in its experience, some unlined CCR surface impoundments have leaked to the point that the CCR became dry. PC 120 at 35. In drafting the definition, IEPA therefore left out the term “liquids”: “experience has shown a cover system is needed to control potential effects to health and the environment to the maximum extent possible.” *Id.* For support, IEPA relies on USEPA’s position that simply because water has leaked from the impoundment does not mean it should not be considered an inactive CCR surface impoundment:

USEPA clearly states its position that inactive CCR surface impoundments require regulation and the only exceptions are inactive CCR surface impounds that are completely dewatered and have a cap that is consistent with Part 257. Given this position by USEPA, it appears the definition of “inactive CCR surface impoundment” in Part 257.53 is not intended to include CCR surface impoundments that have no liquids simply because the liquids have leaked into the environment. PC 129 at 34.

Dynegy argues that IEPA has misinterpreted the preamble to USEPA’s Part 257 by omitting the phrase “and liquids” from the definition. PC 137 at 22. Saying that the definition as proposed by IEPA would create an impossible scenario, Dynegy points to the preamble of Part 257. *Id.* Dynegy argues that the preamble identified a subset of units that qualified as “inactive CCR surface impoundments” but are not subject to all CCR Rule requirements because they were capped and dewatered within three years of the publication of the Rule. *Id.* In Dynegy’s view, the USEPA preamble is addressing exceptions from the applicable requirements rather than broadening the definition to include units that do not contain liquids. *Id.* at 22-23.

IEPA opposes Dynegy's proposed changes to this definition, asserting that "an impoundment should not avoid regulation under Part 845 simply because the liquids in the impoundment have already leaked into the environment or have been removed in preparation for closure." PC 129 at 5, 6. IEPA argues that including "and liquids" could allow a surface impoundment to escape regulation under Part 845 if the unit currently did not have liquids. *Id.* Additionally, IEPA argues, "the presence or absence of liquids has no bearing on the amount of CCR in a surface impoundment." *Id.* at 6.

Board Findings. At issue is whether the inactive surface impoundment was "designed to hold" CCR and liquids, but still contains CCR," or "designed to hold CCR and liquids, but contains both CCR and liquids" on or after the proposed cutoff date of October 19, 2015. The Board agrees with the former intent, which is reflected in IEPA's proposed definition.

"Inactive CCR surface impoundment" means a CCR surface impoundment in which CCR was placed before but not after October 19, 2015 and still contains CCR on or after October 19, 2015. Inactive CCR surface impoundments may be located at an active facility or inactive facility. 35 Ill. Adm. Code 845.120.

The Board notes that for an impoundment to be an inactive surface impoundment, first it must be a *CCR surface impoundment*, which is defined in Section 845.120 as being designed to "hold CCR and liquid." The next condition is that CCR should have been placed in the impoundment before but not after October 19, 2015 and still contains CCR on or after October 19, 2015. *See* 35 Ill. Adm. Code 845.120. Thus, the Board finds that the proposed definition of Inactive CCR surface impoundment does not expand the scope of the regulations as argued by Dynegy. Further, the Board finds that the definition is consistent with the federal regulations and provides clarity on the unintended consequence of excluding CCR surface impoundments containing CCR that may have leaked or were drained before the cutoff date. Therefore, the Board declines to make the revisions proposed by Dynegy to the definition of inactive surface impoundment.

Changing the Definition of "Inactive Closed CCR Surface Impoundment." Ameren requests that the definition of "inactive Closed CCR surface impoundment" be modified to replace "October 19, 2015" with "the effective date of this Part." PC 128 at 5. At first notice, the proposed definition read:

"Inactive Closed CCR surface impoundment" means an inactive CCR surface impoundment that completed closure before October 19, 2015 with an Agency-approved closure plan. Proposed Section 845.120.

Ameren argues that setting October 19, 2015, as the cutoff for completion of closure is arbitrary and capricious, and requests that the Board consider site-specific work undertaken at Ameren plants to close surface impoundments. PC 128 at 17.

IEPA and the Attorney General's Office oppose deviating from the general applicability of the rules. PC 120 at 50-58, PC123 at 4. In drafting the rules that comprise Part 845, IEPA explains that it had to be mindful of the ultimate need that the rules would have to be approved

by USEPA. PC 120 at 51. Therefore, the rules must be at least as stringent as those in Part 257. *Id.* IEPA argues that although Ameren has completed some closure activities at its inactive plants, these activities do not render the units “inactive closed CCR surface impoundments” under either Part 257 or proposed Part 845. PC 120 at 50. According to IEPA, Ameren has yet to comply with significant portions of Part 257 and cannot now escape those requirements because it has undertaken some closure activities. *Id.* at 51. IEPA “believed it prudent to use the effective date of Part 257 (October 19, 2015) as the cut-off date for CCR surface impoundments that should be considered closed under State authority, and therefore, not subject to all of the requirements of Part 845, many of which originate in Part 257.” *Id.*

Board Findings. The Board agrees with IEPA regarding Ameren’s proposed change to the definition of “inactive Closed CCR surface impoundment.” This is a rule of general applicability. Maintaining October 15, 2015, the effective date of the federal rule, as the cutoff date for completing closure activities at inactive CCR surface impoundments is equitable to all participants. As pointed out by IEPA, Part 257 contains requirements that had not been contained in any state rules, including compliance with groundwater protection standards at downgradient waste boundaries. PC 120 at 51. Ensuring that all CCR surface impoundments fulfill the requirements of proposed Part 845 ensures protection of the environment and human health in the State and will help ensure approval by USEPA of Illinois’ rules. To address site-specific issues, an affected entity may avail itself of relief mechanisms, such as an adjusted standard or a variance. The Board declines to make the proposed change to the definition of “inactive closed CCR surface impoundment.”

Adding a Definition of “Release.” In response to a Board question concerning the meaning of the term “release” for these rules, IEPA proposed the following definition:

“Release” means for Part 845, leaching of dissolved constituents at a concentration above the applicable GWPS as measured at a CCR surface impoundment’s points of compliance or physical movement of CCR, except subject to an Agency approved closure or corrective action, from inside the CCR surface impoundment to the outside the CCR surface impoundment. Exh. 2 at 168.

Midwest Generation requests that the Board either omit the definition of “release” or revise it. PC 125 at 26. Arguing that the IEPA-proposed definition could inadvertently encompass routine removals of CCR at surface impoundments in addition to the intended “catastrophic failure or an erosional failure.” *Id.* Midwest Generation proposes the following revisions to the definition proposed by IEPA:

“Release” means for Part 845, leaching of dissolved constituents at a concentration above the applicable GWPS as measured at a CCR surface impoundment’s points of compliance or physical movement of CCR, except subject to an Agency approved closure or corrective action or except routine removals as part of the operation of the CCR surface impoundment, from inside the CCR surface impoundment to the outside of the CCR surface impoundment. *Id.* at 27.

After further considering the hearing questions about its proposed definition, IEPA states that it “does not believe a contrasting definition to that provided in the Act is necessary, or even appropriate.” PC 120 at 62. In addition, IEPA explains that certain language changes proposed in its final comments clarify the intent of the usage of the term “release.” *Id.* Midwest Generation is amenable to omitting a definition of “release” or including its proposed definition. PC 125 at 27.

Board Findings. If usage of the term “release” in the proposed rules is consistent with the definition at Section 3.395 of the Act, as it should be, the Board sees no need for a contrasting Part 845-specific definition. The proposed rules use the term “release” numerous times in varied contexts, i.e., releases to groundwater, surface water, and air. The Board finds that the generally applicable statutory definition of “release”—which encompasses “any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment”—sufficiently addresses concerns regarding the term’s meaning for Part 845. 415 ILCS 5/3.395 (2018). The Board declines to make the proposed change to the definition of “release.”

Changing the Definitions of “CCR Storage Pile” and “Temporary Accumulation.”

To address the environmental risks posed by temporary storage piles of CCR, the Environmental Groups urge the Board to create strict time and volume limits within the definitions of “CCR storage pile” and “temporary accumulation.” PC 124 at 54. The Environmental Groups assert that the rules should not “allow the use of coal ash piles of unlimited size for an indefinite time.” *Id.* at 55. “Neither the definition of ‘CCR storage pile’ and ‘temporary accumulation’ nor the controls required at Section 845.740(b)(4)(B) provide protections sufficient to address those significant pollution risks.” *Id.*

Board Findings. The Board shares the Environmental Groups’ concerns about the environmental risks posed by CCR storage piles and temporary accumulation, particularly because the rules do not prescribe any time or volume limits. However, the Board prefers to develop additional record information in the sub-docket addressing CCR landfills and waste piles before deciding whether to change the proposed definitions and implementing regulations. Therefore, the Board adopts IEPA’s proposed definitions of “CCR storage pile” and “temporary accumulation” without revision.

Adding a Definition of “1000-Year Flood.” The Board asked IEPA to comment on whether the proposed rules should include a definition of the term “1000-year flood.” “Section 845.450(a)(5)(B) requires the spillway capacity for Class 2 CCR surface impoundments to be based on the flow from a 1000-year flood. Please comment whether the proposed rules should include a definition of the term 1000-year flood under Section 845.130.” IEPA agreed they should and proposed a definition based on the United States Geological Survey (USGS) definition. “According to the USGS the 1000-year flood means that statically [sic] speaking, a flood of that magnitude (or greater) has a 1 in 1,000 chance of happening in any given year. This statistical value is based on observed data. This definition can be added to the proposed regulation.” Exh. 2 at 163.

Board Findings. The term “1000-year flood” appears twice in the rules (Sections 845.450, 845.510) but was not defined at first notice. The Board accepts IEPA’s proposed definition of 1,000-year flood as it is based on the definition used by the USGS. At second notice, the Board therefore adds this definition to Section 845.120:

“1000-year flood” means a flood of magnitude (or greater) of 1 in 1000 probability of occurring in any given year.

Subpart B: Permitting

Subpart B specifies when construction and operating permits must be obtained for constructing, operating, retrofitting, remediating, and closing CCR surface impoundments. It also contains the corresponding application requirements that owners and operators must meet to obtain these permits from IEPA. In addition, the rules include public participation requirements that must be satisfied before IEPA may issue the permits.

The Environmental Groups expressed concerns that the proposed rules did not require submission of relevant permit-related plans and assessments with permit applications. Also, many participants are concerned about permit-related documents being written, and public hearings being conducted, solely in English and therefore not readily understandable to residents with limited English proficiency. *See* Tr. 2 PC at 12:4-9, 55:15-20, 70:1-7; Tr. 3 PC at 51:19-52:11; Tr. 6 at 167:20-22. These participants request that the documents be translated into all local languages and that, if requested, translators be present at hearings. PC 19. Additionally, Midwest Generation asked that the Board extend the proposed deadline to submit operating permit applications for a certain category of CCR surface impoundments.

Permit Requirements and Standards of Issuance

At second notice, the Board amends Section 845.200(a)(1), which prohibits listed activities without a construction permit. Specifically, the Board adds the word “including” to clarify that the subsection is not limited to facilities performing corrective action. *See* PC 49, Att. 2 at 6.

General Provisions

In pre-filed questions, the Board asked IEPA to further clarify if the Agency approval of previous assessments, investigations and, plans would be contingent on prior investigations that met the requirements of the proposed rules. Hearing Officer Order 6/23/20, Att. A at 5, 6. IEPA responded by discussing the intent of the section. PC 120 at 63. “Mr. Lecrone stated that if the data was deemed valid by the Agency, it was the Agency’s intention to use the data.” *Id.* IEPA proposed a revision to Section 845.210(d)(1) that captures that intent:

- d) Previous Assessments, Investigations, Plans and Programs
 - 1) The Agency may approve the use of any hydrogeologic site investigation or characterization, groundwater monitoring well or system, or

groundwater monitoring plan, bearing the seal and signature of an Illinois Licensed Professional Geologist or Qualified Professional Engineer, completed prior to the effective date of these rules to satisfy the requirements of this Part. *Id.*

Board Findings. The Board finds IEPA's proposed language clarifying and adds it to Section 845.210(d)(1) for second notice.

In addition, the Board finds that the IEPA listserv (an electronic mailing list) for each facility will be vital in distributing required notices about CCR surface impoundments to interested persons. Given the central role of these listservs to meaningful public participation, the Board adds rule text on their creation, management, and use. At second notice, the Board therefore adds a new subsection (i) to Section 845.210. The Board also makes corresponding amendments to Sections 845.240(b), (e), (f), and (g); Section 845.260(b); and Section 845.650(e).

Construction Permits

Section 845.220 specifies the content requirements for construction permit applications, as well as the duration of issued construction permits. Application requirements vary depending on whether the applicant seeks a construction permit for new construction, corrective action construction, or closure construction. A construction permit lasts for a fixed term of up to three years, except when it is for the closure or retrofit of a CCR surface impoundment. In that case, the permit has an initial fixed term of either the timeframe approved by IEPA or five years, whichever is less.

At second notice, for new construction, the Board clarifies the permit application content requirements regarding location restrictions, which include placement above the uppermost aquifer, wetlands, fault areas, seismic impact zones, unstable areas and floodplains. Specifically, the Board amends Section 845.220(b)(1) to mirror the location restriction language of Section 845.230(a), which concerns initial operating permit applications for new CCR surface impoundments and lateral expansions. *See* PC 49, Att. 2 at 6-7. These changes promote consistency in the rule language, as well as clarity by citing directly to the prescribed sections of the rule language, removing ambiguity.

At second notice, the Board also accepts proposed revisions from IEPA to Section 845.240(a)(9) as follows:

- 9) Certification that the owner or operator of the CCR surface impoundment completed the public notification and public meetings required pursuant to Section 845.240, a summary of the issues raised by the public, a summary of any revisions, decisions, or other considerations made in response to those issues, and a list of interested persons in attendance who would like to be added to the Agency's listserv for the facility. PC 120 at 64.

Operating Permits

Section 845.230 specifies the content requirements for operating permit applications. Those requirements vary depending on whether the applicant seeks: (1) an initial operating permit for a new CCR surface impoundment or lateral expansion; (2) a renewal operating permit; (3) a post-closure care operating permit; or (4) an initial operating permit for an existing CCR surface impoundment, an inactive CCR surface impoundment, or an inactive closed CCR surface impoundment. An operating permit lasts for a fixed term of up to five years.

The main issues raised by participants concerned the assessments, plans, and financial assurance certification to be included in the operating permit application, as well as extending application filing deadlines. The Board discusses these issues and makes its findings below. In addition, the Board corrects minor typographical errors acknowledged by IEPA. PC 49, Att. 2 at 7.

The Board also adds clarifying language to Sections 845.230(d)(2) and (d)(3):

- 2) The initial operating permit application for existing or inactive CCR surface impoundments that have not completed an Agency approved closure prior to July 30, 2021, must contain the following information and documents on forms prescribed by the Agency:

* * *

- 3) The initial operating permit application for an existing or inactive CCR surface impoundment where an Agency approved closure has been completed prior to July 30, 2021, and where the impoundment is not an inactive closed CCR surface impoundment, must contain the following information and documents on forms prescribed by the Agency:

* * *

Adding “or inactive” here is consistent with Section 845.100(d), which generally provides inactive CCR impoundments are subject to all requirements of this Part that apply to existing CCR impoundments.

Assessments and Plans. The Environmental Groups argue that an owner or operator of a new, existing, inactive, or inactive closed CCR surface impoundment should be required under Sections 845.230(a) and (d) to submit the assessments and plans with its application, rather than just the corresponding certifications from qualified professional engineers. PC 124 at 74-76. Specifically, the Environmental Groups propose including—in the operating permit application—the assessments and plans associated with the certifications required by Sections 845.230(a)(6) through (a)(11). *Id.* These assessments and plans, six in all, consist of the initial hazard potential classification assessment; initial emergency action plan; initial structural stability assessment; initial safety factor assessment; fugitive dust control plan; and initial inflow design flood control system plan. *Id.* at 82. They also recommend adding the safety and health

plan required by Section 845.530 to the permit application. *Id.* The Environmental Groups contend that “[t]hese essential plans and assessments, as well as their supporting documentation, include fundamental protections that must not be excluded from the permitting process or public participation.” *Id.* at 76. Failing to do so would prevent meaningful public review and participation in the application process. *Id.* at 74-76.

Further, the Environmental Groups ask the Board to make all the assessments and plans enforceable conditions of the permit. PC 124 at 79. The Environmental Groups assert that making the approved plans and assessments an enforceable part of the permit is essential to provide the oversight to ensure the Fugitive Dust Control Plan is adequately protective. *Id.* at 76.

IEPA opposes the Environmental Groups’ recommendation that an operating permit application include the assessments and plans rather than just the certifications from the qualified professional engineers. PC 129 at 7-8. IEPA argues that many of these plans and assessments are regulated by other State agencies under State and federal regulations. *Id.* at 8. For example, the safety and health plan falls under the jurisdiction of the Occupational Health and Safety Administration; and the safety factor and structural stability assessments and related issues are regulated by the Illinois Department of Natural Resources. *Id.* Requiring submittal and analysis of this information, IEPA argues, would duplicate efforts and infringe on programs under other agencies’ jurisdictions. *Id.* IEPA also objects to making all the assessments and plans enforceable conditions of the permit by arguing that doing so is unnecessary and, “may cause conflict with other regulatory programs of this, or other agencies.” *Id.*

Board Findings. The Board agrees that the Qualified Professional Engineer (QPE) certifications in the permit application should be accompanied by the assessments and plans being certified as compliant. By requiring that this fundamental information be in the application, the Board seeks neither to duplicate other agencies’ programs nor question IEPA’s reliance on the QPE certifications. But the Board finds that the public may meaningfully participate in the CCR permitting process only by having these assessments and plans readily available for review.

This public participation is especially important in environmental justice communities, as found by the General Assembly:

[M]eaningful participation of State residents, especially vulnerable populations who may be affected by regulatory actions, is critical to ensure that environmental justice considerations are incorporated in the development of, decision-making related to, and implementation of environmental laws and rulemaking that protects and improves the well-being of communities in this State that bear disproportionate burdens imposed by environmental pollution. 415 ILCS 5/22.59(a)(5).

Citizens interested in reviewing the assessments and plans should not have to resort to the Freedom of Information Act (FOIA) (5 ILCS 140 (2018)). Instead, adding this information to the application furthers the statutory directive that these rules “specify meaningful public

participation procedures for the issuance of CCR surface impoundment . . . operating permits.” 415 ILCS 5/22.59(g)(6).

In its rules on nonhazardous waste landfill permit applications (35 Ill. Adm. Code 812), the Board requires substantial documentation that is prepared under the jurisdiction of other agencies. The Board sees no harm in having CCR surface impoundment permit applications include the plans and assessments that underlie the QPE certifications. Therefore, the Board accepts the Environmental Groups’ proposed amendments to Sections 845.230 as follows, but notes a discrepancy in the numbering of the sections in filed comments. The Board accepts the proposal from the Environmental Groups as to 230(a)(6) thru (a)(11) (*See* PC 124 at 84).

- 6) Initial hazard potential classification assessment and accompanying certification, required by Section 845.440(a)(2);
- 7) Initial Emergency Action Plan and accompanying certification, required by Section 845.520(e);
- 8) Initial structural stability assessment and accompanying certification, required by Section 845.450(c);
- 9) Initial safety factor assessment and accompanying certification, required by Section 845.460(b);
- 10) Fugitive dust control plan and accompanying certification, as required by Section 845.500(b)(7);
- 11) Initial inflow design flood control system plan and accompanying certification, as required by Section 845.510(c)(3);

The Board accepts the proposed addition of Section 845.230(a)(17), as proposed by IEPA in response to a request from the Environmental Groups (*See* PC 120 at 65).

- 17) A certification that the owner or operator meets the financial assurance requirements of Subpart I of this Part.
- 18 Safety and health plan, as required by Section 845.530.

The Board accepts the proposals from the Environmental Groups as to Sections 845.230(d)(2) (F), (G), and (M) through (R). PC 124 at 84-85. Due to a mis-numbering in the original rule proposal, the sections (F) and (G) will be labeled (G) and (H) and (M) through (R) will be labeled (N) through (S) at second notice. The Environmental Groups also suggest that the permit application include all documentation supporting the assessment and plans, but the Board finds that unnecessary and unduly burdensome.

Finally, the Board declines to require that the assessments and plans be enforceable permit conditions. Doing so might tread on the jurisdiction of other agencies authorized to

oversee their implementation. Also, the Board wishes to avoid wasting State resources by having IEPA duplicate the efforts of these other agencies. However, the rules do not prohibit IEPA from including assessments and plans as enforceable permit conditions.

Financial Assurance Certification. In response to ELPC's question regarding why there is not a requirement to include financial certification in the operating record, IEPA suggests requiring that the operating permit application include a certification—that the owner or operator meets the Subpart I financial assurance requirements. PC 49, Att. 2 at 1. At second notice, the Board accepts IEPA's additions to Sections 845.230(a)(17) and (d)(2)(M).

Extension of Submission Deadline. Midwest Generation asks that the Board extend the deadline to submit operating permit applications for CCR surface impoundments not regulated under Part 257. PC 125 at 23. As proposed at first notice, Section 845.230(d)(1) would require those owners and operators to submit operating permit applications by September 30, 2021. Midwest Generation wants a March 31, 2023 deadline, contending that the September 30, 2021 deadline does not give enough time to accurately complete the application's 21 required technical documents. *Id.* The necessary documents include eight independent samples required by Section 845.650(b); Midwest Generation argues that accurate representative background data cannot be assured from sampling completed within a six-month period. *Id.* at 23-24; *see also id.* at 3-6.

IEPA opposes Midwest Generation's suggested revisions, on the grounds that on or about December 15, 2019, owners and operators were invoiced for all CCR surface impoundments that IEPA believes are subject to Section 22.59(j) of the Act. PC 129 at 8-9. Therefore, since then, these owners and operators have been on notice that IEPA considers their impoundments subject to Part 845. *Id.* at 9. They could have begun collecting data at that time. *Id.* IEPA also argues that Midwest Generation's proposed language would require it to determine which impoundments are subject to USEPA's Part 257, which IEPA maintains has not been part of this rulemaking's record. *Id.* Finally, IEPA contends that Midwest Generation's proposed application deadline of March 31, 2023, would bypass the closure prioritization requirements of Section 22.59(g)(9) of the Act, implemented by Sections 845.700(g) and (h). *Id.* at 9-10. Section 22.59(g)(9) of the Act requires the Board to adopt rules which prioritize closure of those impoundments which pose the greatest risk to public health, the environment, and those located in environmental justice communities. 415 ILCS 5/22.59(g)(9).

Board Findings. The Board agrees that since December 2019, owners and operators of CCR surface impoundments under Section 22.59(j) have been on notice of the impending rules. Even with Part 845 rules in development, owners and operators could have started collecting data, relying on 40 C.F.R. 257 as guidelines. Additionally, all owners and operators were put on notice when IEPA submitted the proposal to the Board for Part 845 on March 30, 2020. Further, the proposed permit application submission deadline of September 30, 2021, allows these facilities almost a year and nine months to prepare their operating permit applications. Additionally, the Board looks to the state legislatures' directives to make a priority of closing those impoundments posing the greatest risk to public health, the environment, and those located in environmental justice communities. The Board therefore declines to extend the proposed

submission deadline. However, an owner or operator may seek a variance to extend the submission deadline based on site-specific circumstances.

Pre-Application Public Notification and Public Meeting

The Board acknowledges that the General Assembly emphasized public participation for the CCR rules and recognizes the critical importance of public participation. *See* 415 ILCS 5/22.59(a)(5), (g)(6).

Section 845.240 requires the owner or operator to hold two public meetings before applying with IEPA for a construction permit. In response to Board and ELPC questions, IEPA agrees that Section 845.240(b) should require the public notice to include the owner's or operator's contact information, as well as the address of the internet site where the applicable documentation will be available under Section 845.240(e). PC 49, Att. 2 at 3, 7-8. Also, in response to ELPC questions, IEPA agrees to add language requiring the notice to be mailed, delivered, or posted at least 14 days before the public meeting. *Id.* at 2.

The Environmental Groups express concern over the format of the pre-application public meetings. PC 124 at 92. They refer to a public meeting hosted by Midwest Generation in which there were poster board stations around the room that resulted in one-on-one conversations between the public and the company representatives, rather than a dialogue. *Id.*

To address these concerns, the Environmental Groups propose adding four requirements to Section 845.240(f): (1) the owner or operator must present a comparison of the projected groundwater impacts for each alternative considered, including objective pros and cons of each alternative; (2) the meeting must include a question and answer session with owner or operator representatives present who are knowledgeable and qualified to answer the questions; (3) if any questions are unanswered during the question and answer session, the owner or operator must respond to those questions in writing within a reasonable timeframe and post those answers on the facility's CCR website; and (4) the owner or operator must explain that IEPA is creating a listserv for the facility, compile a list of interested persons at the public meeting, and transmit that list to IEPA. PC 124 at 100-01. IEPA does not object to the Environmental Groups proposed new Section 845.240(f)(4)—requiring owners and operators to explain the listserv—but offers amended language. PC 129 at 12.

Dynergy also expresses concern over Section 845.240, asking the Board to amend subsection (b). PC 126, Att. A at 14-15. For example, Dynergy wants the notice requirements for the proposed construction project to mirror Section 845.260(b)(3)'s notice requirements. *Id.* The suggested changes would remove the requirements that an owner or operator (1) mail or deliver the notice to residents within a one-mile radius, (2) post notice on all of the owner or operator's social media outlets, and (3) to post the notice throughout areas within a 10-mile radius. *Id.* IEPA counters, stating that Dynergy's proposed changes to decrease the scope of the notice requirements would not fulfill the Act's Section 22.59(g) requirements for meaningful public participation. PC 129 at 11. However, IEPA does not object to Dynergy's proposed addition requiring the owner or operator to email the notice to IEPA's listserv for the facility. *Id.* at 11-12.

CWLP is concerned with the impacts proposed Section 845.240 would have on the feasibility of the rules' timelines. PC 122 at 17-18. CWLP argues that IEPA has not pointed to any other rules that require public meetings before the permit application submittal. *Id.* at 17. Further, CWLP asks the Board to consider whether two public meetings are necessary, and whether one evening public meeting would offer more meaningful public participation. *Id.* at 18. CWLP also suggests replacing the requirement to generally summarize issues raised at the public hearing with a requirement to summarize only comments the owner or operator finds relevant. *Id.* at 20.

IEPA opposes CWLP's proposed to Sections 845.240(a) and (g), including replacing the word "discuss" with "solicit public comment." PC 129 at 10-11. The Board agrees with IEPA that a crucial objective of the pre-application public meetings is an interactive dialogue between the parties. *Id.* IEPA chose the word "discuss" to match the language of the federal CCR rules; IEPA believes changing "discuss" as CWLP suggests would not be as protective as the federal rules. *Id.* at 11; *see also* 40 C.F.R. § 257.96(e). IEPA also opposes CWLP's suggested change to Section 845.240(g), arguing that it would create the appearance that an owner or operator determines what is relevant to the public, and because IEPA believes the summary should include all the issues raised at the public meeting. *Id.* at 11.

Next, in response to Little Village Environmental Justice Organization's questions, IEPA proposed additional language to Section 845.240(c) requiring an owner or operator to provide translation services, when requested, at hearings in areas with significant populations of non-English speakers. PC 49, Att. 2 at 1.

In response to Board questions, IEPA proposed additional language requiring the owner or operator to submit, with its application, a summary of any revisions, determinations, or considerations made during these public meetings. PC 120 at 64, *see also* 8/12/20 Tr. at 34-35.

The language proposed at first notice requires the owners or operator of a surface impoundment applying for a construction permit to post—on a publicly accessible website at least 14 days before the hearing—all documentation relied on in making its tentative application. The Board received several public comments asking the Board to extend this timeframe from 14 days to at least 30 days before the hearing. Tr. 2 PC at 49-50, 97.

Board Findings. The Board has been directed by the State legislature to place a special emphasis on public notice and participation in this rulemaking. *See* 415 ILCS 5/22.59(a)(5), (g)(6). Based on this and the technical nature of the supporting documents, the Board agrees that an additional 16-days would foster that public participation. Section 845.240(b) will be revised as follows:

- b) The owner or operator must prepare and circulate a notice explaining the proposed construction project and any related activities and the time and place of the public meeting. Such a notification must be mailed, delivered, or posted at least 30 days prior to the public meeting. The owner or operator of the CCR surface impoundment must:

The Board finds that the owner or operator must include more information including its contact information, the internet address where all the documents it relied upon when making its tentative permit application, and the date when that information will be posted to its public website. A new subsection (4) will be added to Section 845.240(b) as follows:

- 4) include in the notice the owner or operator's contact information, the internet address where the information in Section 845.240(e) will be posted, and the date on which the information will be posted to the site.

Similarly, the Board has been directed by the state legislature to ensure public participation of especially vulnerable populations who may be affected by these regulations. As such, the Board finds it is necessary to allow members of the public to request translation services during public meetings. If requested, the owner or operator must provide translation services. Section 845.240(c) will be revised as follows:

- c) When a proposed construction project or any related activity is located in an area with a significant proportion of non-English speaking residents, the notification must be circulated, or broadcast, in both English and the appropriate non-English language, and the owner or operator must provide translation services during the public meetings required by Section 845.240(a), if requested by non-English speaking members of the public.

The Environmental Groups proposed additions to Section 845.240(f) which were agreed to by IEPA with a slight change made to (f)(4). PC 129 at 12. The Board notes that (f)(1) through (3) were not included in IEPA's post hearing proposal, but finds the changes proposed by the Environmental Groups are warranted.

- f) At the public meeting, the owner or operator of the CCR surface impoundment must:
- 1) outline present its decision-making process for the construction permit application, including, where applicable, the corrective action alternatives and the closure alternatives considered. The presentation must include a comparison of projected groundwater impacts for each alternative considered and an objective comparison of the pros and cons of each alternative considered;
 - 2) include a question and answer portion of the meeting to allow the public to ask questions, and there must be representatives from the owner or operator present that are qualified and knowledgeable enough to answer the questions posed by the public;
 - 3) if there are questions posed by the public at the hearing that cannot be answered in person or if there are subsequent questions posed by the public following the meeting, the owner or operator of the facility must respond

to those questions in writing within a reasonable timeframe and post the response on the facility's CCR website required by Section 845.810; and

- 4) explain that the Agency is creating a listserv for the facility, compile a list of interested persons from those that attend the public meeting, and transmit that list to the Agency with the permit application.

A new subsection (g) will be inserted in Section 845.240, and the previous subsection (g) will be lettered (h).

- g) Fourteen (14) days following the public meetings required pursuant to Section 845.240, the owner or operator shall distribute a general summary of the issues raised by the public, as well as a response to those issues or comments raised the public. If these comments resulted in a revision, change in a decision, or other such considerations or determination, a summary of these revisions, changes, and considerations shall be included in the summary. Such a summary shall be distributed to any attendee who requests a copy at the public meeting.
- g h) This Section does not apply to applications for minor modifications as described in Section 845.280(d).

A key component in the distribution of information about the facilities will be a listserv. The Board finds it is necessary to add new Section 845.240(i) to describe the function and requirements of the listserv.

Tentative Determination and Draft Permit

Under Section 845.250, once IEPA receives and reviews a complete application for a construction permit, operating permit, or joint construction and operation permit, it must notify the applicant in writing of its tentative determination to approve or deny the permit application, as well as its intent to circulate public notice of its tentative determination. If IEPA tentatively determines to issue the permit, it must issue a draft permit along with a brief description of any permit conditions.

“If Applicable.” IERG asks the Board to add “if applicable” to Sections 845.250(b)(1) and (2) as follows:

- b) Upon tentative determination to issue or deny the permit:
- 1) If the determination is to issue the permit, the Agency must notify the applicant in writing of the content of the tentative determination and draft permit and of its intent to circulate public notice of issuance in accordance with Section 845.260, if applicable;
 - 2) If the determination is to deny the permit, the Agency must notify the applicant in writing of the tentative determination and of its intent to

circulate public notice of denial, in accordance with Section 845.260, if applicable. In the case of denial, notice to the applicant must include a statement of the reasons for denial, as required by Section 39(a) of the Act.

IERG argues the additions will ensure IEPA's intent is reflected in the rules and prevent confusion later as to which requirements apply to inactive closed CCR surface impoundments. PC 121 at 3-4.

According to IEPA, only four CCR surface impoundments at three facilities meet the definition of "inactive closed CCR surface impoundment" and are therefore subject to Section 845.170. PC 129 at 4. Because so few CCR surface impoundments are exempt, to add "if applicable" to provisions which are typically required, could cause confusion and uncertainty. *Id.* Therefore, IEPA asks the Board to reject IERG's proposed changes and keep the language as IEPA proposed it. *Id.*

Board Findings. The Board agrees with IEPA that IERG's changes would confuse the rules' applicability to most CCR surface impoundments. Accordingly, the Board declines to make these changes to Section 845.250.

Draft Permit Public Notice and Participation

Section 845.260 specifies how IEPA must notify the public of a completed application, including its tentative determination and how the public may provide comment and request a hearing. The participants raised several issues concerning the provisions of this section that are discussed below.

Additional Notice Requirements. The Environmental Groups proposed several revisions to Section 845.260(b) to enhance the public notice requirements. PC 124 at 93-94. IEPA does not object to the changes except as to the inclusion of the facility's CCR website in the Agency's public notice of the draft permit. PC 129 at 12-13. IEPA opposes this addition, stating that its permit decision is based on IEPA's record; including a URL to the facility's website—which may contain a large amount of information irrelevant to the permit—could confuse the public. *Id.* "To include the owner or operator's website in the Agency's notice, where it may contain a large amount of information that is not relevant to the permit, could serve to confuse the public as to the scope of the public comments sought." *Id.*

Board Findings. The Board is persuaded by the Environmental Groups to add three of the four proposed sections, omitting a proposed section on the facility's URL as that is not under the purview of IEPA. The new sections help fulfil the mandate of the Coal Ash Pollution Prevention Act to provide meaningful participation for residents, especially vulnerable populations. 415 ILCS 22.59(a)(5) (2018). Section 845.260(b)(2) will add the following new sections:

- G) A translation of the public notice into the appropriate language or languages will be made if the Agency determines that a project is located within one mile of a significant population of non-English speaking residents;
- H) A brief description of how members of the public can request a public hearing under Section 845.260(d); and
- I) A brief description of how members of the public can request being added to the Agency's listserv for the facility.

Length of Public Comment Period. No less than 15 days after it notifies the applicant of its tentative determination to issue or deny the permit, IEPA must provide public notice of the tentative determination. In IEPA's original proposal, the public notice begins a public comment period of 30 days. To ensure "meaningful" public participation, the Environmental Groups request that the public comment period be extended from 30 days to 45 days. PC 124 at 94. IEPA argues other major water pollution control permit programs require no more than 30-day public comment periods, and objects to this comment period being extended. PC 129 at 13-14.

Board Findings. The Board finds that due to the technical nature of the applications, as well as the importance of public participation for this rule, an additional 15 days of public comment would benefit the public. *See* 415 ILCS 5/22.59(a)(5), (g)(6). The Board therefore changes Section 845.260(c)(1) as follows:

- c) Public Comment Period
- 1) The Agency shall accept written comments from interested persons on the draft permit determination for ~~30~~ 45 days following the circulation of the public notice pursuant to subsection (b).

Other Changes. The Environmental Groups also ask the Board to add a new Section 845.260(c)(6), requiring an applicant to post all permit application materials on its facility's CCR website, "including all underlying supporting documents, prior to the beginning of the public comment period established by the Agency." PC 124 at 103. IEPA opposes this addition, arguing that Section 845.240(e) already requires placing all relevant documents on the facility website and that adding the proposed text to a rule on IEPA public notice requirements "potentially opens the [IEPA] permit decision to appeal if [IEPA] does not verify and first require that all documents are posted to the facility website prior to the start of the public comment period." PC 129 at 13. The Board agrees with IEPA that the proposed language could be construed as creating a prerequisite to IEPA issuing the draft permit and beginning public comment. *See id.* As posting the information on the facility's website is out of IEPA's control, the proposed language could inappropriately burden IEPA's permitting process. *See Id.* The Board therefore declines at second notice to add the Environmental Group's proposed subsection (c)(6) to Section 845.260.

In response to CWLP's question, IEPA agrees that having both subsections 845.260(c)(3) and (5) is superfluous. PC 49, Att. 2 at 4. Section 845.260(c)(3) specifically requires IEPA to consider all comments filed within the 30-day comment period, while Section 845.260(c)(5)

requires IEPA to “consider all timely submitted comments.” *Id.* The intent of Section 845.260(c)(5) was to include comments filed in the event a public comment extension was granted. *Id.* However, because IEPA would weigh all timely filed comments the same, extension or not, IEPA suggests clarifying Section 845.260(c)(3) and deleting Section 845.260(c)(5). *Id.*

The Environmental Groups request and IEPA agrees to add new section 845.260(e)(2)(I) as follows:

- (I) A translation of the public notice into the appropriate language or languages will be made if the Agency determines that a project is located within one mile of a significant population of non-English speaking residents.

IEPA also says that under Section 845.270(c), it is already required to provide notice of the permit issuance or denial to not only the applicant, but also to any person who provided an email address, who requested a public hearing, or who is on IEPA’s listserv for the facility. *Id.*

Board Findings. The Board accepts IEPA’s changes to Sections 845.260(c)(3) and (5) as these changes are consistent with the Board’s decision to extend the public comment period to 45 days. The Board accepts the proposed changes to 845.260(e)(2)(I) as it fulfills the mandate to provide meaningful participation to vulnerable residents.

Final Permit Determination and Appeal

Section 845.270 specifies how IEPA must notify the applicant and concerned parties of its final determination, as well as the appeal process before the Board. The Board will address some minor changes suggested by the participants to the provisions of this section.

As in Section 845.250(b)(1) and (2), IERG asks the Board to add “if applicable” to Section 845.270(a), so that it reads as:

- a) The Agency must not make a final permit determination until the public participation process in Section 845.260, if applicable, has concluded.

As with the reasoning in Section 845.250, the Board declines to make IERG’s suggested change to Section 845.270(a). Finding that because so few CCR surface impoundments are exempt, the addition of “if applicable” could cause confusion.

Board Findings. IEPA proposed changes to Section 845.270 in response to questions raised during the August Hearings. PC 49, Att. 2 at 3-4.. The Board accepts these changes. First, the Board amends Section 845.270(c) to require IEPA post—to its website—its final determination and, if a public hearing was held, the responsiveness summary. *Id.* Next, the Board amends Section 845.270(e) to start the appeal timeline when the applicant is served with IEPA’s final determination, consistent with Section 40 of the Act (415 ILCS 5/40 (2018)). *See* PC 49, Att. 2 at 11.

Sections 845.270(c) and (e) will be amended as follows:

- (c) The Agency shall provide a notice of the issuance or denial of the permit to the applicant, to any person who provides comments or an email address to the Agency during the public notice period or a public hearing, and to any person on the Agency' listserv for the facility. Such notice shall briefly indicate any significant changes which were made from terms and conditions set forth in the draft permit. The Agency shall post its final permit determination and if a public hearing was held, the responsiveness summary, to the Agency's website.

- (e) All appeals must be filed with the Board within 35 days after the final action is served on the applicant.

Responsiveness Summary. Additionally, the Environmental Groups propose adding language to Section 845.270(f) that would require IEPA to prepare a responsiveness summary when IEPA receives any written public comment. PC 124 at 104. IEPA objects to the addition, stating that a responsiveness summary, like in the NPDES permit program, is only necessary after a public hearing; it summarizes not only comments received but the hearing process itself. PC 129 at 14. IEPA also says that under Section 845.270(c), it is already required to provide notice of the permit issuance or denial to not only the applicant, but also to any person who provided an email address, requested a public hearing, or is part of IEPA's listserv for the facility. *Id.*

Board Findings. The Board agrees with IEPA's position, and declines to require that EPA prepare a responsiveness summary for each written public comment it receives.

Subpart C: Location Restrictions

Subpart C of Part 845 specifies the location restrictions for new, existing, and laterally expanded CCR surface impoundments. Subject to satisfying its conditions, Subpart C allows a surface impoundment to be located at least five feet above the uppermost aquifer; within wetlands; at least 60 meters (200 feet) away from a fault area's outermost damage zone; within a seismic impact zone; and within an unstable area.

The Environmental Groups and other participants question whether Subpart C's location restrictions sufficiently protect human health and the environment. They raise concerns about CCR surface impoundments in floodplains. They also seek to amend the location restriction on proximity to the uppermost aquifer. Other questions raised on the record include whether QPE certifications should accompany location-restriction demonstrations in an initial operating permit application, as well as whether the 200-foot conversion for 60 meters should appear each time 60 meters is mentioned in the fault areas provision.

Floodplains

The Environmental Groups and members of the public are most concerned about CCR surface impoundments within floodplains. PC 124 at 33; PC 21, 22, 24, 29, 66, 127. Those concerns are heightened by the prospect of closing surface impoundments with CCR left in place. PC 124 at 35 (“capping CCR impoundments in place . . . in a floodplain is neither secure nor permanent”).

Many participants argue that the Board’s rules should prohibit CCR surface impoundments within floodplains. TR 2 PC at 95-97, TR 3 PC at 41-44. Some are concerned that if the Middle Fork of the Vermillion River flooded, CCR surface impoundments within the floodplain could contaminate the waters. PC 16, 17, 23, 25, 26, 27, 29, 61, 81, 87, 88, 97, 118. Others express the same concern over the Mississippi River and Wood River Creek flooding; they emphasized that the rules must protect these areas. PC 29, 61, 118.

The Environmental Groups assert that floodwaters “erode riverbanks, increase groundwater levels, degrade caps, and increase the threat of collapse.” PC 124 at 33. Their witness, Mr. Hutson, testified that because floodplains are unstable locations, it is always unsafe to allow a new, existing, or retrofitted CCR surface impoundment within a floodplain: “Storm-induced high water events are capable of overtopping berms and increase the potential for catastrophic release of wastes. Rising water elevations caused by even minor high water events will re-wet CCR contained in the unlined disposal unit and renew production of leachate each time.” Exh. 14 at 10. After hearing, the Environmental Groups reiterate that “retaining CCR surface impoundments, whether operating or closed, on a river’s floodplain must be viewed as unacceptable waste management planning,” adding that the practice “will facilitate contamination of waters of the state and have potentially catastrophic results for future residents.” PC 124 at 34.

Accordingly, the Environmental Groups seek “an explicit prohibition on locating coal ash impoundments in floodplains”—specifically, “an existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment must not be located on a floodplain within the 100-year flood area of inundation.” PC 124 at 33, 36. This position is supported by numerous members of the public. PC 21, 22, 24, 29, 66, 127. Alternatively, although the Environmental Groups maintain that floodplains meet the definition of “unstable area,” they ask that the Board avoid any ambiguity by adding to Subpart C a “separate location restriction for floodplains within the 100-year flood area of inundation.” PC 124 at 36.

IEPA opposes explicitly addressing floodplains in the Subpart C location restrictions for five reasons. PC 120 at 10-12. First, nothing in Part 845 precludes considering floodplains as an “unstable area,” the proposed definition of which contains “an inexhaustive list of examples.” *Id.* at 11. Adding floodplains to the definition is therefore unnecessary, argues IEPA. Second, some floodplains “are relatively stable” and others “may not be stable,” but for every CCR surface impoundment, it must be demonstrated, on a site-by-site basis, that the impoundment is “in a stable location or can be constructed in such a way to maintain structural stability, regardless if it is in a floodplain area or not.” *Id.* Third, all CCR surface impoundments are subject to the floodplain requirements of Section 845.110(b)(1) (*id.*), which generally prohibit

facilities and practices in floodplains from, among other things, resulting in CCR being carried away by flood waters. Fourth, IEPA notes that other waste management programs “allow for engineered waste placement in floodplain areas,” citing federal and Illinois solid waste regulations (40 C.F.R. § 258.11; 35 Ill. Adm. Code 811.102(b)) and adding that “[a]s it happens, those landfills may very well receive CCR.” *Id.* at 11-12. Fifth and finally, because IEPA is seeking federal approval of Illinois’ CCR surface impoundment program, USEPA “frequently reminded” IEPA to “keep the language and function” of the State rules “as similar as possible” to Part 257. *Id.* at 10. IEPA therefore tracked Part 257’s wording very closely, “especially pertaining to definitions and location restrictions”; departures from the federal text “will require additional explanation and justification to USEPA to gain federal approval.” *Id.* at 10-11.

Board Findings. The Board finds that the Environmental Groups and members of the public have raised concerns warranting location restrictions for CCR surface impoundments within floodplains. The Board agrees that floodplains may be an “unstable area” but finds that the “unstable area” demonstration may not address all the pertinent concerns potentially presented by a floodplain. Under Section 845.110(b)(1) as proposed at first notice, any CCR surface impoundment or lateral expansion of a CCR surface impoundment within a floodplain must not “restrict the flow of the base flood,⁵ reduce the temporary water storage capacity of the floodplain, or result in washout of CCR, so as to pose a hazard to human life, wildlife, or land or water resources.” This prohibition is designed to protect human life and the environment, but it does not require a Qualified Professional Engineer-certified demonstration as does Subpart C.

For additional protection of human life and the environment, the Board finds that this record justifies adding to Subpart C a location restriction requiring a floodplain-specific demonstration by the owner or operator, to be certified by a qualified professional engineer. The Board therefore adds floodplains restrictions to Subpart C based on the Section 845.110(b)(1) prohibition. Accordingly, the owner or operator must demonstrate that recognized and generally accepted engineering practices have been incorporated into the CCR surface impoundment’s design to “ensure that the CCR surface impoundment will not restrict the flow of the base flood, reduce the temporary water storage capacity of the floodplain, or result in washout of CCR, so as to pose a hazard to human life, wildlife, or land or water resources.” Further, a Qualified Professional Engineer must certify that the demonstration meets the floodplains requirements. Absent this demonstration and certification, the impoundment must not be located within the floodplain. As a new numeric section cannot be added at second notice, the Board adds the floodplain restrictions to Section 845.340 on “unstable areas.” The Board makes the following revisions to Section 845.340:

Section 845.340 Unstable Areas and Floodplains

- a) An existing or new CCR surface impoundment, or any lateral expansion of a CCR surface impoundment must not be located in an unstable area unless the owner or operator demonstrates that recognized and generally accepted engineering practices have been incorporated into the design of the CCR surface impoundment

⁵ “Base flood” means “a flood that has a 1 % or greater chance of recurring in any year or a flood of a magnitude equaled or exceeded once in 100 years on average within the time of historical river level records.” Proposed Section 845.110(b)(1)(B)(i).

to ensure that the integrity of the structural components of the CCR surface impoundment will not be disrupted.

- b) The owner or operator must consider all of the following factors, at a minimum, when determining whether an area is unstable:
- 1) On-site or local soil conditions, including but not limited to liquefaction, that may result in significant differential settling;
 - 2) On-site or local geologic or geomorphologic features; and
 - 3) On-site or local human-made features or events (both surface and subsurface).
- c) An existing or new CCR surface impoundment, or any lateral expansion of a CCR surface impoundment must not be located in a floodplain unless the owner or operator demonstrates that recognized and generally accepted engineering practices have been incorporated into the design of the CCR surface impoundment to ensure that the CCR surface impoundment will not restrict the flow of the base flood, reduce the temporary water storage capacity of the floodplain, or result in washout of CCR, so as to pose a hazard to human life, wildlife, or land or water resources. For purposes of this subsection (c):
- 1) Base flood means a flood that has a 1 percent or greater chance of recurring in any year or a flood of a magnitude equaled or exceeded once in 100 years on average within the time of historical river level records.
 - 2) Floodplain means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, which are inundated by the base flood.
 - 3) Washout means the carrying away of CCR by waters of the base flood.
- de) The owner or operator of the CCR surface impoundment must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of subsections (a) and (c) of this Section.
- ed) The owner or operator of an existing CCR surface impoundment must complete the demonstration required by subsections (a) and (c) of this Section and submit the completed demonstration along with the qualified professional engineer's certification to the Agency with the facility's initial operating permit application.
- fe) The owner or operator of a new CCR surface impoundment, or a lateral expansion of a CCR surface impoundment, must submit plans and specifications in a construction permit application that demonstrate the CCR surface impoundment will be constructed under subsections (a) and (c) of this Section. Upon completion of construction, the owner or operator must obtain a certification from a qualified professional engineer that the CCR surface

impoundment or lateral expansion was constructed in accordance with the requirements in subsections (a) and (c) of this Section and submit the certification to the Agency in the facility's initial operating permit application.

The Board revises Section 845.700(a)(1)(E) to include “floodplains” as one of the location restrictions under the required closure requirements because the Board added “floodplains” as an additional location restriction at Section 845.340(c). The Board makes the following changes to subsection (a)(1)(E):

E) unstable areas and floodplains, as specified in Section 845.340.

Also, as noted under Subpart A, the Board deletes the floodplains requirement at Section 845.110(b)(1) and renumbers the remaining subsections.

Uppermost Aquifer

The Environmental Groups’ witness, Mr. Hutson, requests that the Board consider altering the uppermost aquifer location restriction in Section 845.300. Exh. 14 at 9. Section 845.300 specifies the restrictions on placing a CCR surface impoundment above the uppermost aquifer. As proposed at first notice, the impoundment “must be constructed with a base that is located no less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer.” Section 845.300(a). Mr. Hutson wants this rule text to read above the uppermost “zone of saturation” instead of “aquifer.” Exh. 14 at 9. This request relates to his suggestion that the Board define the term “uppermost zone of saturation” in Section 845.120. *Id.*

IEPA opposes the change as unnecessary. PC 120 at 10. It argues that the defined term “uppermost aquifer” already incorporates the uppermost zone of saturation. *Id.* Specifically, the proposed definition of “groundwater” includes the zone of saturation; the proposed definition of “aquifer” includes groundwater at any portion of a geologic formation; and the proposed definition of “uppermost aquifer” includes any geologic formation that is an aquifer.” *Id.* at 10-11. IEPA argues that this definition hews to the federal rule and again cautions against deviating from it by adding the definition. The change would require additional justification to USEPA when requesting federal approval of Part 845. *Id.* at 10.

Board Findings. The Board agrees with IEPA. Because the “upper limit of the uppermost aquifer” already includes the “uppermost zone of saturation,” the Board finds it unnecessary to change the Section 845.300(a) location restriction as suggested by Mr. Hutson.

Professional Engineer Certifications

In response to a Board question, IEPA agreed that a facility’s initial operating permit application must include not only the completed location restriction demonstrations, but also a qualified professional engineer’s certification of each demonstration’s compliance. Board Questions, 6/23/20, p. 8; IEPA pre-filed answers 9/24/20 p. 8 of Attachment 2. The Board therefore amends Sections 845.300(c), 845.310(c), 845.320(c), 845.330(c), and 845.340(d) to reference the corresponding certification.

Fault Areas

Section 845.320(a) provides both a setback and the ability to demonstrate an alternative to that setback. Specifically, the CCR surface impoundment must not be located “within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time.” However, the owner or operator may demonstrate that “an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR surface impoundment.”

In its line-numbered version of the rule (JCAR r01, filed June 22, 2020), JCAR proposes deleting the second parenthetical conversion from meters to feet, *i.e.*, the second occurrence of “(200 feet),” presumably because it might seem redundant, given that the same conversion of 60 meters appears earlier in the same sentence. But IEPA expresses concern that JCAR’s deletion introduces an inconsistency within the provision. PC 120 at 7.

At first notice, the rule’s two references to “60 meters” included the same parenthetical conversion to feet, *i.e.*, “(200 feet),” rounding up to the nearest ten. USEPA’s corresponding rule (40 C.F.R. § 257.62(a)) includes the same text. Although the conversion of 60 meters to 200 feet is given earlier in Section 845.320(a) for the location restriction, keeping “(200 feet)” with the second occurrence of “60 meters” avoids any potential rounding ambiguity for an owner or operator demonstrating an alternative setback distance. The Board finds that the 200-foot conversion specified in the setback language should be mirrored in alternative-setback demonstration language. The Board therefore declines to delete the second occurrence of “(200 feet)” at second notice.

SUBPART D: DESIGN CRITERIA

Subpart D establishes design criteria for existing and new CCR surface impoundments as well as lateral expansions of surface impoundments. These criteria address design of impoundment liners, leachate collection and removal system, and slope maintenance. This subpart also includes requirements for assessment of hazard potential classification, structural stability, and safety factors. These provisions are briefly summarized below.

A significant issue with this Subpart is the proposed requirement of a leachate collection and removal system for new CCR surface impoundments. Disputed issues include whether a sufficient technical basis exists to require leachate collection systems for new CCR surface impoundments, whether leachate collection systems should be limited to impoundments of less than 20 acres, and whether an alternative equivalent system should be allowed that could potentially be as protective as a leachate collection system. For the reasons discussed below, the Board declines most of the proposed revisions to Subpart D for second notice. The Board proceeds with the proposed requirements for a leachate collection and removal system under Section 845.420, with minor changes suggested by IEPA.

Liner Design Criteria for CCR Surface Impoundments

Existing CCR Surface Impoundment

Section 845.400 prescribes the specifications and requirements for a composite liner and an alternative composite liner for existing CCR Surface Impoundments consistent with 40 CFR 257. SR at 19; Buscher Test. at 2; *see* 40 CFR 257.71. The composite liner must consist of an upper geomembrane liner at least 30-mil in thickness, and a lower compacted earth liner of at least two-foot in thickness with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/sec). *See* 35 Ill. Adm. Code 845.400(b). If the geomembrane liner is made of high-density polyethylene (HDPE), it must be at least 60-mil in thickness. Section 845.400(c) allows the use of an alternative composite liner consisting of an upper geomembrane liner meeting requirement of the composite liner with a lower non-geomembrane liner with a liquid flow rate no greater than the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.

Under proposed Section 845.400(a), an existing CCR surface impoundment is considered to be an existing “lined surface impoundment” if it has been constructed with either a composite liner or an alternative composite liner meeting the requirements of this section. Additionally, Section 845.400(e) requires an owner or operator of an existing CCR surface impoundment that has not completed an Agency approved closure prior to July 30, 2021 to submit an initial operating permit application under Section 845.230 that demonstrates whether the CCR surface impoundment was constructed with a liner that meets one of two listed liner requirements.

Section 845.400(f) classifies a CCR surface impoundment as an “unlined CCR surface impoundment” if the owner or operator: determines that the CCR surface impoundment is not constructed with a liner that meets the requirements of this Section; or fails to document whether the CCR surface impoundment was constructed with a liner that meets the requirements of this Section. All unlined CCR surface impoundments are subject to the closure or retrofit requirements of Section 845.700. Finally, Section 845.400(h) requires the submission of a certification from a qualified professional engineer that the CCR surface impoundment meets the liner requirements of subsection (a) in the facility’s initial operating permit application.

New and Expanded CCR Surface Impoundments

The liner design criteria for new, and lateral expansions of, CCR surface impoundments under proposed Section 845.410 are the same as the requirements for existing impoundments in Section 845.400. Exh. 2, Buscher PFT at 2. This section requires a qualified professional engineer’s certification regarding the compliance with the requirements of this section: prior to construction for design of the liner system; and upon completion of construction. *See* Sections 845.410(c), (d).

Board Findings. The Board concludes that the proposed liner design criteria for existing, new, and expanded CCR surface impoundments are consistent with federal requirements.

Leachate Collection and Removal Systems Generally

IEPA proposed that a new CCR surface impoundment must be constructed with a leachate collection and removal system. Mr. Buscher noted that “[l]eachate refers [to] water that has been in contact with CCR.” IEPA Resps. 1st Supp. at 13. IEPA intended “to minimize the amount of head on the liner system which will decrease the potential for the movement of fluids through the liner.” SR at 19; *see* Buscher Test. at 2. Mr. Nielson explained that “hydraulic head” means the “depth of water in an impoundment above the uppermost low-permeability (not allowing fluid to quickly pass through) layer of the composite liner.” Midwest Generation Resps. at 47-48. IEPA stated that its proposal is “similar to leachate collection systems required for solid waste landfills.” SR at 19. Mr. Buscher testified that combining the liner system, leachate collection and removal system, and final cover system “will effectively minimize impacts to groundwater resources.” Buscher Test. at 2-3. IEPA argues that it seeks to protect groundwater “regardless of the means by which an owner or operator elects to manage CCR.” PC 120 at 44.

Midwest Generation presented testimony and comments opposing and questioning this requirement, and also submitted alternative proposals. Midwest Generation urges the Board to reject the Agency’s proposal to require a leachate collection system, limit the requirement to impoundments that are over 20 acres, or allow for an equivalent system that is as protective as a leachate collection system. PC 125 at 16. IEPA strongly opposes Midwest Generation assertions, as well as the alternative proposals, and asks the Board to adopt the leachate collection requirements as proposed at first notice. In the following subsections, the Board reviews the record on these issues before deciding to submit, for second-notice review, the original proposal requiring that a new CCR surface impoundment have a leachate collection and removal system.

Operating Characteristics of New CCR Surface Impoundments

Because CCR surface impoundments move and manage CCR in water, IEPA argues that “CCR in a surface impoundment carries with it a greater potential to migrate through the engineered impoundment liner and contaminate groundwater.” PC 120 at 43. IEPA adds that reducing head on the liner of a CCR surface impoundment is “as important as reducing the head on the liner of a CCR landfill.” *Id.* at 44.

In response, Midwest Generation’s expert, Mr. Nielson, argues that there are numerous characteristics distinguishing municipal solid waste (MSW) landfills from CCR surface impoundments. Midwest Generation Resps. at 37-38. He notes that, while leachate removal is an established standard for municipal solid waste [MSW] landfills, landfill leachate “is very different than transport water used to move CCR from a power station.” Nielson Test. at 6. He argues that “[t]he flow rate of leachate collected in an MSW landfill is typically less than 1/10th of the typical flow rate of [a] CCR transport water system.” *Id.*; *see* Midwest Generation Resps. at 55-56. Midwest Generation notes that by design and statutory definition, a CCR surface impoundment collects both CCR and the transport water carrying it from the power station. PC 125 at 17, citing 415 ILCS 5/3.143 (2018). After CCR falls to the bottom of the impoundment through the passive treatment process of sedimentation, transport water is recycled to the power

station to again move CCR to the surface impoundment. PC 125 at 17, citing Midwest Generation Resps. at 38, 55. Thus, Midwest Generation argues that a leachate collection and removal system would continuously drain the impoundment and compromise its function as storage for transport water. Midwest Generation Resps. at 55. If the system effectively dewateres the impoundment, the plant would require a number of large water storage tanks. Midwest Generation Resps. at 58; *see* PC 125 at 17.

Midwest Generation suggests that the functions of both CCR landfills and CCR surface impoundments support requiring a composite liner system. *See* PC 125 at 17. However, Midwest Generation concludes that the basic operation of a CCR surface impoundment distinguishes it from a CCR landfill and does not support a leachate collection system at a CCR surface impoundment. *Id.* Mr. Nielson asserts the decision whether to install a leachate collection and removal system should be left to the owner or operator. Nielson Test. at 6; *see* Midwest Generation Resps. at 60, citing 8/12 Tr. at 144-45. Midwest Generation also argues that, if a surface impoundment closes through removal, then leachate collection is not necessary for dewatering, and there is no reason to require it. PC 136 at 7.

IEPA argues that Mr. Nielson's testimony does not persuasively identify "any significant differences in how hydraulic head acts upon the liners of CCR landfills and CCR surface impoundments." PC 120 at 44, citing Nielson Test. at 6. IEPA further argues that his testimony "does not support elimination of leachate collection and removal systems, which would reduce the head in a CCR surface impoundment as is required in 40 CFR 257.70(d) for CCR landfills." PC 120 at 44. Responding to Midwest Generation's question regarding the significance of reducing head over the liner, Mr. Buscher maintained that as waste disposal expertise evolves, reducing head above liner material "has been determined to be a major factor in landfill liner performance to minimize leakage." Midwest Generation Questions at 6, IEPA Resps. 1st Supp. at 15. Since Part 257 requires CCR impoundments and CCR landfills to be constructed with the same composite liner systems, he cited 40 CFR 257.70(d), which requires leachate collection and removal systems in CCR landfills, as support for the conclusion that water can seep through a composite liner. *Id.* Mr. Buscher also noted that CCR transport water is similar to leachate from a typical solid waste landfill containing CCR because both liquids have "the potential to contaminate groundwater if the liquid migrates through the liner of the impoundment or landfill." IEPA Resps. 1st Supp. at 14.

Regarding the operational issues highlighted by Midwest Generation, IEPA acknowledges that there may be a need to delay the use of a leachate collection system to address operational concerns like dust control and recycling of impoundment water. PC 120 at 49. IEPA notes that the leachate collection system is intended to "provide the ability to reduce head on the CCR liner during impoundment operation and to facilitate the removal of free liquids at the time of closure." *Id.* IEPA proposes the following addition to Section 845.420(a) to clarify the operational requirements for new and retrofitted CCR surface impoundments:

- 10) at a minimum, the leachate collection and removal system must be operated to remove free liquids from the CCR surface impoundment at the time of closure and during post closure care. *Id.* Attach. A at 49.

Board Findings. The Board does not dispute that CCR surface impoundments differ from CCR landfills, and it recognizes that they involve distinct operations. However, the Board is not persuaded that differences justify striking Section 845.420 from its proposal. The Board notes that the primary purpose of the leachate collection system is to remove the leachate collected in the unit to reduce the head on the liner. Exh. 2, Buscher PFT at 2. IEPA states that the reason for reducing the head on the liner in landfills is to reduce the threat of migration of leachate from the landfill into groundwater below the landfill. PC 120 at 44. Mr. Nielson agrees that “[i]ncreases in hydraulic head will increase the flow rate of fluids through a hypothetical hole in a geomembrane and then through porous media (compacted clay liner) as described by various theories of fluid dynamics.” MG Resps. at 40. Thus, the installation and operation of a leachate collection system in a new CCR surface impoundments serves the same purpose as in a landfill to reduce the head on the liner to reduce the threat of groundwater contamination.

Further, the Board recognizes that the operation of CCR surface impoundments unlike landfills require the head above the liner to be maintained at a level sufficient to not expose the CCR as well as provide storage for recycling transport water. In this regard, the proposed rules do not require the leachate in the CCR surface impoundment to be drained or establish a maximum head level above the liner like the Board’s landfill regulations. Thus, the owner or operator has the flexibility to operate the leachate collection system to maintain minimum head necessary to keep the CCR in the impoundment wet and provide for storage, but at the same time minimize potential threat to groundwater contamination by avoiding unnecessary build-up of head above the liner. To clarify the proposed intent, the Board accepts IEPA’s addition to Section 845.420(a).

Finally, regarding Midwest Generation’s contention that a leachate collection system is not needed if an impoundment is closed by removal, the Board notes that a new provision at Section 845.420 (a)(10) establishes a minimum use and does not limit dewatering during operation. In addition, the proposed rules do not require closure by removal. Based on these considerations, the Board declines to strike Section 845.420 from its proposal.

USEPA Risk Assessment

Mr. Nielson argues that increased potential leakage of leachate through the liner does not necessarily result in statistically significant risk to human health and the environment.” MG Resps. at 40-41. He maintains that neither models nor damage cases document these risks. *Id.* at 41. Further he notes that the federal rule “does not require the reduction of hydraulic head on liner systems in CCR surface impoundments.” *Id.* at 42.

To support its contention that leachate collection systems are unnecessary for new CCR surface impoundments, Midwest Generation relies on this statement from USEPA’s December 2014 publication of Human and Ecological Risk Assessment of Coal Combustion Residuals (Regulation Identifier No. 2050-AE81): “Composite-lined units were found to be the most protective disposal practice, resulting in risks far below all criteria identified in this risk assessment.” Risk Assess. at 6-11; *see* MG Questions at 6. USEPA compared the risk analysis to data and damage cases and determined that “[n]o damage cases were identified for composite-lined units.” Risk Assessment at 5-47. Thus, Mr. Nielson argues that USEPA has concluded

that a leachate collection and removal system is not necessary for a CCR surface impoundment to be protective of human health and the environment. Nielson Test. at 5, 10; MG Resps. at 52, 54; PC 125 at 18. He asserts that the Risk Assessment is a valid scientific study and suggests that the Board should rely upon it to strike this proposed leachate collection requirement. *Id.*

In response to a Board question, Mr. Nielson elaborated that the assessment evaluated mechanisms including leachate collection to prevent the release of constituents into the environment, but “USEPA did not require any type of leachate collection and removal system for CCR impoundments.” MG Resps. at 34, 53, citing 80 Fed. Reg. 21369 (Apr. 17, 2015). However, he admitted that the Risk Assessment does not explicitly indicate whether modeled surface impoundments contained leachate collection removal systems. MG Resps. at 34, citing Risk Assessment at 4-8 – 4-9. Mr. Nielson also notes that he is “not aware of any CCR surface impoundment that has been constructed with a leachate collection system” and determined that the damage cases reviewed by USEPA did not include surface impoundments with leachate collection. MG Resps. at 35. Since there are no damage cases for composite-lined units that do not have a leachate collection system, Mr. Nielson concluded that such a system “is not necessary for the protection of human health and the environment.” *Id.*

IEPA argues that USEPA’s Risk Assessment fully supports its proposal to require leachate collection and removal systems in CCR surface impoundments. PC 120 at 44. The assessment considered three liner scenarios: no liner without a leachate collections system; a clay liner without a leachate collection system; and a composite liner at which “[a] leachate collection system is assumed to exist between the waste and the liner system.” *Id.*, citing Risk Assessment at 4-8 – 4-9.

IEPA notes Mr. Nielson’s response that “it appears that the USEPA assumed that a leachate collection and removal system were not installed or operational based on the US EPA’s discussions of hydraulic head of the ponded water in CCR surface impoundments.” PC 120 at 44, citing MG Resps. at 34. IEPA discounts the assumption on which Mr. Nielson relies. IEPA stresses that the assessment considered two scenarios without leachate collection systems, impoundments at which built-up head from ponded water “would be expected.” PC 120 at 45. IEPA suggests that Mr. Nielson did not distinguish these scenarios from one another and overlooked USEPA’s consideration of composite-lined impoundments with leachate collection systems. *Id.* Regarding Midwest Generation’s question as to the basis for IEPA’s determination for requiring a more rigorous standard than that required by the USEPA, Mr. Buscher responded that the Part 257 design parameters fail “to address the head on the composite liner of the CCR impoundment,” which he characterized as “the fundamental flaw” of those standards. MG Questions at 6, IEPA Resps. 1st Supp. at 14-15. He argues that the Part 257 design parameters fail “to maximize the protection of groundwater resources by providing the ability to minimize head above the CCR impoundment composite liner.” *Id.* at 15

Midwest Generation disputes IEPA’s representation of Mr. Nielson’s testimony regarding the consideration of the leachate collection system in the Risk Assessment. PC 136 at 6. The purpose of a leachate collection system is to reduce the hydraulic head on a liner, and the Risk Assessment “described scenarios in which there was a large hydraulic head in the CCR surface impoundment during operation due to the significant volume of water. PC 136 at 6, citing MG

Resps. at 33. Midwest Generation argues that USEPA would not have described a large hydraulic head if the modeled impoundment had leachate collection system. PC 136 at 6, citing Risk Assessment at 4-6, 5-28 – 5-29, K-1; 9/30 Tr. at 200-01. Midwest Generation stresses that the federal rule does not require a leachate collection system for CCR surface impoundments. PC 136 at 6.

Regarding Mr. Nielson’s view that the damage cases addressed by the Risk Assessment demonstrate that a leachate collection system is not necessary, IEPA argues that, when discussing infiltration through the impoundment to the soil beneath it, the Risk Assessment considered a composite liner including the effect of a leachate collection system. PC 120 at 45, citing MG Resps. at 35, PC 120 at 45, citing Risk Assessment at 4-8 – 4-9. IEPA suggests that damage cases show that composite liners are the most effective because they “were modeled with leachate collection systems.” PC 120 at 46. Regarding the citations provided by Midwest Generation to various provisions of the Risk Assessment to support Mr. Nielson’s conclusion that the Risk Assessment did not model CCR surface impoundments with leachate collection systems, IEPA acknowledges that these provisions may describe the effect that the presence or absence of hydraulic head may have on the rate of infiltration. PC 120 at 46-48, PC 59 at 1-2, citing Risk Assessment at 2-3, 4-6, 5-28 – 5-29, K-1. However, IEPA argues that does not address whether modeled composite-lined CCR surface impoundments included “an operating leachate collection system.” *Id.*

Board Findings. As noted by IEPA, the Risk Assessment used three types of liner scenarios to assign infiltration rates⁶ for characterizing the potential risks to human health and the environment associated with leaching of contaminants from waste management units to groundwater: no liner, clay liner and composite liner. Risk Assessment at 4-8. Further, it describes the composite liner as “a liner system that consists of a plastic liner (e.g., high-density polyethylene membrane) underlain by either a natural or geosynthetic clay liner. *A leachate collection system is assumed to exist between the waste and the liner system.*” *Id.* at 4-8 - 4-9 (emphasis added). Other than the liner scenarios described in assigning infiltration rates, the Risk Assessment does not explicitly make any distinction between composite liners with and without leachate collection system. Based upon a comprehensive probabilistic, sensitivity, and uncertainty analyses, the Risk Assessment concluded that “Composite-lined units were found to be the most protective disposal practice, resulting in risks far below all criteria identified in this risk assessment.” *Id.* at 6-11.

Mr. Nielson opines that USEPA may have assumed that a leachate collection and removal system were not installed or operational based on the Risk Assessment’s discussions of hydraulic head of the ponded water in CCR surface impoundments. MG Resps. at 34. But, the Board is not inclined to speculate on any assumptions that USEPA may have made in the Risk Assessment. The Board agrees with Mr. Nielson that differing conclusions may be drawn from the Risk Assessment discussion of leachate collection systems and hydraulic head at the base of impoundments. *Id.* However, rather than speculating or relying on assumptions, the Board will

⁶ Infiltration is the process through which water migrates through the waste management units (CCR surface impoundments and landfills) enters the subsurface environment. Risk Assessment at 4-8.

rely on the Risk Assessment scenario of composite liner to find that requiring leachate collection system for new CCR surface impoundments is consistent with the conclusions of the Risk Assessment.

Next, the Board examines whether the proposed leachate collection system is consistent with the USEPA's CCR rules at Part 257. Midwest Generation asserts that "[f]ollowing the extensive U.S.EPA Risk Assessment, the U.S.EPA decided in the final Federal CCR Rule not to require a leachate collection system for CCR surface impoundments." PC 136 at 6. Therefore, "there is no basis to include a leachate collection system in any CCR surface impoundment." *Id.* The Board notes that USEPA's initial proposal required CCR surface impoundments to be constructed with a composite liner, as well as a leachate collection and removal system between the upper and lower components of the composite liner. *See* proposed 40 C.F.R. § 257.71, 75 Fed. Reg. 35243 (June 21, 2010). However, USEPA eliminated this leachate collection requirement in the final CCR rules. USEPA did so because of concerns that placing the leachate system between the lower and upper components of the composite liner would compromise the liner's integrity:

The integrity of the composite liner system is indeed dependent upon the direct and uniform contact of the upper GM component with the lower soil component. The proposed requirement for CCR surface impoundments to construct a leachate collection system between the FML and soil components would prevent the direct and uniform contact of the upper and lower components and, therefore, compromise the integrity of the composite liner. *For this reason, [US]EPA is not requiring a leachate collection and removal system for new surface impoundments or any lateral expansion of a CCR surface impoundment.* 80 FR 21369 (Apr. 17, 2015). (emphasis added).

Section 845.420 requires the leachate collection and removal system to be placed on top of the liner system. Accordingly, the leachate system will not compromise the composite liner's integrity. The leachate system adds protection to the minimum Part 257 liner system requirements, but the Board finds that it is also consistent with the federal design requirements for maintaining the composite liner's integrity. Therefore, the Board is unpersuaded that either the USEPA Risk Assessment or Part 257 justifies striking the requirement for leachate collection and removal systems at new CCR surface impoundments.

Detecting Leaks Through Monitoring Wells

Midwest Generation argues that groundwater monitoring wells required by the federal rule and proposed Section 845.630 provide an early leak detection system. Responding to the Environmental Groups, Mr. Nielson elaborated that an "early leak detection system" means a system allowing "testing and detection of CCR constituents in the groundwater sampled from groundwater monitoring wells located at the edge of the CCR surface impoundments." Midwest Generation Resps. at 66. He considers this "the most proven and appropriate method of leak detection." *Id.* Midwest Generation also cites requirement for corrective action that would "identify the source of the leak, remedy the leak, prevent future leaks, and restore the area(s) impacted by the leak." MG Questions at 16.

In response, Mr. Buscher asserted that the leachate collection system is “a proactive means of protecting groundwater quality as opposed to the reactive approach of detecting and remediating groundwater contamination after it has [] migrated out of the CCR surface impoundment.” IEPA Resps. 1st Supp. at 17. He added that groundwater monitoring wells may detect leaks but do not remedy them. *Id.*

Board Findings. The Board recognizes Mr. Buscher’s distinction between a groundwater monitoring system intended to detect leaks that have occurred from a CCR surface impoundment and a leachate collection system intended to reduce hydraulic head on a liner and the risk of leaks through it. The Board does not discount the importance of a groundwater monitoring system in detecting leaks that may occur. However, the Board is not persuaded that it effectively substitutes for leachate collection or renders it unnecessary. The Board is not convinced that federal groundwater monitoring requirements or proposed state requirements justify striking leachate collection at new CCR surface impoundments from Part 845.

Dust Control

Mr. Nielson, testifying for Midwest Generation, stated that operating a leachate collection and removal system at a CCR surface impoundment would likely result in a dry pond. Nielson Test. at 6; *see* MG Resps. at 60-61; PC 125 at 17. He argues that a dry pond risks fugitive dust emissions. Nielson Test. at 6-7.

IEPA elaborated that operational concerns for a CCR surface impoundment may include “dust control as well as the use of the impoundment water to cool and move the CCR from a power station to a waste treatment unit.” PC 120 at 49. IEPA acknowledged that these factors may delay the use of the leachate collection system to reduce hydraulic head on the liner and proposed revisions to Section 845.420(a) to provide flexibility in the operational requirements for new and retrofitted CCR surface impoundments. *Id.*

Board Findings. As noted under the discussion of operational characteristics, the proposed rules do not require complete removal of leachate or establish a maximum hydraulic head level on a liner system during operation. Nielson Test. at 6; *see* MG Resps. at 59. The owner or operator has the flexibility to maintain the head above the liner to keep the CCR in the impoundment wet during operation for dust control as well as provide for storage for recycling. Therefore, the Board is not persuaded that requiring a leachate collection and removal system necessarily jeopardizes dust control or risks fugitive dust emissions, and these objections do not convince the Board to strike this requirement.

Alternative Methods

If the Board concludes that leachate collection should be required at all new CCR surface impoundment, Midwest Generation urges the Board to revise the proposed rules to allow an owner or operator to submit an alternative method of leachate collection that is at least as protective as the system required under Section 845.420. PC 125 at 22. Midwest Generation asserts that “a collection system similar to the one [Mr. Nielson] presented in his testimony (see Figure 2 of Nielson Pre-filed Testimony) would be equally as protective as the leachate

collection system described in Section 845.420, and also allow a CCR surface impoundment to operate as intended.” *Id.*, citing Exh. 54, Fig. 2. Mr. Nielson asserts that the proposed alternative is “designed to allow a CCR surface impoundment to operate as an impoundment and also to capture any leachate that did penetrate the primary composite liner.” MG Resps. at 43. He characterized the alternative system as “more protective” than IEPA’s proposal because it would provide immediate notice that a liner had leaked and also require less energy to operate. Nielson Test. at 9; *see id.* at 10 (Figure 2); *see* MG Resps. at 67, 44.

IEPA notes that Mr. Nielson’s alternative consists of “a dual liner with the leachate collection and removal system placed below the composite liner required by [Part] 845 and on top of a low permeability geomembrane liner.” PC 120 at 49-50; *see* Nielson Test. at 9-10. However, IEPA prefers the proposed system under Section 845.420. PC 120 at 50. IEPA recommends that, if the Board considers language allowing an alternative system, “it should contain specific design details.” *Id.* IEPA characterizes Mr. Nielson’s proposed “alternative method of leachate collection that is at least as protective as the system required by” IEPA’s proposed rule as “vague” and “subject to interpretation.” *Id.* IEPA argues that it “would necessarily lead to litigation over varying interpretations and should not be adopted.” *Id.*

Board Findings. As noted by IEPA, the Risk Assessment used three types of liner scenarios to assign infiltration rates⁷ for characterizing the potential risks to human health and the environment associated with leaching of contaminants from waste management units to groundwater: no liner, clay liner and composite liner. Risk Assessment at 4-8. Further, it describes the composite liner as “a liner system that consists of a plastic liner (e.g., high-density polyethylene membrane) underlain by either a natural or geosynthetic clay liner. *A leachate collection system is assumed to exist between the waste and the liner system.*” *Id.* at 4-8 - 4-9 (emphasis added). Other than the liner scenarios described in assigning infiltration rates, the Risk Assessment does not explicitly make any distinction between composite liners with and without leachate collection system. Based upon a comprehensive probabilistic, sensitivity, and uncertainty analyses, the Risk Assessment concluded that “Composite-lined units were found to be the most protective disposal practice, resulting in risks far below all criteria identified in this risk assessment.” *Id.* at 6-11.

Mr. Nielson opines that USEPA may have assumed that a leachate collection and removal system were not installed or operational based on the Risk Assessment’s discussions of hydraulic head of the ponded water in CCR surface impoundments. MG Resps. at 34. But, the Board is not inclined to speculate on any assumptions that USEPA may have made in the Risk Assessment. The Board agrees with Mr. Nielson that differing conclusions may be drawn from the Risk Assessment discussion of leachate collection systems and hydraulic head at the base of impoundments. *Id.* However, rather than speculating or relying on assumptions, the Board will rely on the Risk Assessment scenario of composite liner to find that requiring leachate collection system for new CCR surface impoundments is consistent with the conclusions of the Risk Assessment.

⁷ Infiltration is the process through which water migrates through the waste management units (CCR surface impoundments and landfills) enters the subsurface environment. Risk Assessment at 4-8.

Next, the Board examines whether the proposed leachate collection system is consistent with the USEPA's CCR rules at Part 257. Midwest Generation asserts that “[f]ollowing the extensive U.S.EPA Risk Assessment, the U.S.EPA decided in the final Federal CCR Rule not to require a leachate collection system for CCR surface impoundments.” PC 136 at 6. Therefore, “there is no basis to include a leachate collection system in any CCR surface impoundment.” *Id.* The Board notes that USEPA's initial proposal required CCR surface impoundments to be constructed with a composite liner, as well as a leachate collection and removal system between the upper and lower components of the composite liner. *See* proposed 40 C.F.R. § 257.71, 75 Fed. Reg. 35243 (June 21, 2010). However, USEPA eliminated this leachate collection requirement in the final CCR rules. USEPA did so because of concerns that placing the leachate system between the lower and upper components of the composite liner would compromise the liner's integrity:

The integrity of the composite liner system is indeed dependent upon the direct and uniform contact of the upper GM component with the lower soil component. The proposed requirement for CCR surface impoundments to construct a leachate collection system between the FML and soil components would prevent the direct and uniform contact of the upper and lower components and, therefore, compromise the integrity of the composite liner. *For this reason, [US]EPA is not requiring a leachate collection and removal system for new surface impoundments or any lateral expansion of a CCR surface impoundment.* 80 FR 21369 (Apr. 17, 2015). (emphasis added).

Section 845.420 requires the leachate collection and removal system to be placed on top of the liner system. Accordingly, the leachate system will not compromise the composite liner's integrity. The leachate system adds protection to the minimum Part 257 liner system requirements, but the Board finds that it is also consistent with the federal design requirements for maintaining the composite liner's integrity. Therefore, the Board is unpersuaded that either the USEPA Risk Assessment or Part 257 justifies striking the requirement for leachate collection and removal systems at new CCR surface impoundments.

Proposed Size Threshold

If the Board decides to require a leachate collection system at a CCR surface impoundment, Midwest Generation argues that it should limit the requirement to large surface impoundments. PC 125 at 20-21; PC 136 at 6-7. It cites Ms. Shealey's testimony that leachate collection is not needed for smaller ponds to remove transport water. PC 125 at 21, citing MG Resps. at 16. It also cites Mr. Rokoff's testimony that smaller impoundments generally close through removal of the CCR, so “there is no need or benefit afforded to those impoundments from a leachate collection system.” PC 125 at 21, citing Rokoff Test. at 15. Midwest Generation also argues that, because the proposed rule does not require the leachate collection system to operate at an active unit, a system installed in a smaller pond may never operate. PC 125 at 21; PC 136 at 6-7.

Midwest Generation proposed to revise Section 845.420 to require that “[a] new CCR surface impoundment that is larger than 20 acres must be designed, constructed, operated and

maintained with a leachate collection and removal system.” PC 125 at 22 (emphasis in original). Midwest Generation adds that this threshold provides an incentive to construct smaller impoundments, which are more likely closed through removal. PC 125 at 22, citing Rokoff Test. at 15.

IEPA objects to Midwest Generation’s proposal to require a leachate collection and removal system only for impoundments covering an area of more than 20 acres. PC 129 at 15. Although Midwest Generation argues that impoundments smaller than that size are more likely to be closed by removal, IEPA notes that its proposal does not require closure by removal for impoundments of any size. *Id.* IEPA also argues that reducing hydraulic head on the liner is important for any CCR surface impoundment regardless of its size. *Id.* Arguing that USEPA’s Risk Assessment supports its position, IEPA asserts that it “stands by the leachate collection and removal system it has proposed.” *Id.* at 16.

Board Findings. The Board agrees with IEPA that the size of the CCR surface impoundment is not a factor when it comes to the primary purpose of the leachate collection system, *i.e.*, to reduce the hydraulic head on the liner. Although Midwest Generation contends that the smaller impoundments may close by removal, negating the need for a leachate collection system, Part 845 does not require their closure by removal. Further, the Board finds that record in this generally applicable rulemaking does not support allowing new CCR surface impoundments smaller than 20 acres to be constructed without leachate collection system by requiring such impoundments to close by removal. Therefore, the Board declines Midwest Generations proposed changes to Section 845.420(a)

Based on the above discussion of Midwest Generation’s significant issues, the Board finds that the record supports proposing Section 845.420’s leachate collection and removal system without revision, except for IEPA’s clarifying addition of subsection (a)(10). The Board finds that the proposed leachate collection system provides additional groundwater protection against the potential threats of contamination from new CCR surface impoundments, while allowing the operation of the impoundments in compliance with Part 845.

Proposed Requirements for Leachate Collection and Removal System

Section 845.420 requires all new CCR surface impoundments to include a leachate collection and removal system designed, constructed, operated, and maintained to collect and remove leachate from the CCR surface impoundment during its active life and post-closure care period. Subsections (a)(1) through (a)(10) specify the placement, design, and operational requirements for the leachate collection system. Additionally, Section 845.420(b) requires the submittal of a qualified professional engineer certification that the design of the leachate collection system complies with the requirements of Section 845.420 with the facility’s construction permit application. Also, under Section 845.420(c), a similar certification that the leachate collection system has been constructed in accordance with the applicable requirements must be submitted with the facility’s initial operating permit application. The Board adopts these proposed requirements at second notice without any substantive changes, except for the addition of Section 845.420(a)(10).

Position of System

Section 845.420(a)(1) requires the leachate collection and removal system to be placed above the liner required by Section 845.400 or Section 845.410. Mr. Nielson testified that designing and operating a CCR surface impoundment is “not practical with leachate collection and removal systems above a single composite liner.” MG Resps. at 35. He adds that hazardous waste surface impoundments construct these systems between a top liner and bottom composite liner. *Id.* He argues that “USEPA understands that putting a drainage layer at the base of an impoundment that is designed to treat, store and dispose of liquid waste is not practical.” *Id.*

Responding to the Environmental Groups (Env. Questions (Nielson) at 2), Mr. Nielson argued that IEPA’s proposal may risk the integrity of the liner system. “In my opinion, the installation of a granular drainage material such as crushed limestone directly above a composite liner could possibly result in tears of the geomembrane.” MG Resps. at 52. However, he added that this risk could be minimized through a design by an experienced engineer and installation by an experienced contractor. *Id.*

On behalf of Midwest Generation, Ms. Shealey stressed that, by definition and design, surface impoundments contain water. Shealey Test. at 9. She added that “[t]here is always water above the liner in a CCR surface impoundment, and so a leachate collection system above the liner will be in continuous operation.” *Id.* She argued that operating a leachate collection system that pumps constantly would be costly and would not necessarily protect a liner. *Id.* She concluded that a system placed above the liner “serves no functional purpose. *Id.*; see MG Resps. at 36. Midwest Generation does not support IEPA’s proposed requirement. Shealey Test. at 9.

She compared this proposed requirement to a leachate collection system placed below an impoundment’s liner. In that case, the system “would only encounter water that was able to move through the liner, and a liner designed in accordance with the Draft Rule would substantially reduce that penetration.” Shealey Test. at 8. She maintained that this system “would encounter less water” and require less pumping or treating while capturing contamination before it reached groundwater. *Id.* at 8-9. She concluded by recommending that the Board amend this section by allowing an owner or operator “to install an alternative leachate collection system that is at least as protective as the system required in [Section] 845.420(a).” *Id.* at 9.

Environmental Groups asked Ms. Shealey whether a leachate collection system placed above the liner would minimize hydraulic head on it. Env. Questions at 8. Ms. Shealey cited Mr. Nielson’s testimony that USEPA’s risk assessment “did not identify any damage cases for composite-line CCR surface impoundments.” MG Resps. at 14, citing Nielson Test. at 5. She also cited his testimony that collection and removal of leachate is “not an industry standard, because it is not practical given the inherent operation of a surface impoundment.” *Id.*

Board Findings. Based on USEPA’s conclusion that placement of the leachate collection system between the two liners compromises the integrity of the composite liner, the Board finds the proposed placement of the leachate collection system on top of the liner system to be acceptable. This configuration, the Board notes, is similar to what the Board requires for

nonhazardous waste landfills under 35 Ill. Adm. Code 811. Further, regarding concerns with placement of drainage materials causing liner damage, the Board notes that the proposed leachate collection system provisions are subject to the construction quality assurance requirements under Section 845.290 as well as qualified professional engineer certification. These requirements will ensure that installation will be done by maintaining the integrity of the liner. Finally, the Board notes that the operational concerns regarding the leachate collection system are addressed above under the general operation characteristics. Therefore, the Board adopts Section 845.420(a)(1), as proposed, to require the placement of the leachate collection and removal system above the liner.

Filter Layer Conductivity

Section 845.420 (a)(2) requires a filter layer with a hydraulic conductivity of no less than 1×10^{-5} cm/sec to be placed over the leachate collection and removal system. Midwest Generation noted that the proposal “does not require a thickness or filtration criteria.” MG Questions at 6. Midwest Generation also asked for clarification on the type of material that can be used as a filtering layer. *Id.* Mr. Buscher responded that the proposed filter requirement intends “to minimize the amount of CCR entering the leachate collection system which could cause the system to become clogged with CCR.” IEPA Resps. 1st Supp. at 15. He explained that the proposed requirement provides “[f]lexibility on determining the type of material to use.” *Id.*

Collection Pipes. The Board proposed in subsection (a)(7) that the leachate collection and removal system must “have collection pipes” that meet three conditions. 44 Ill. Reg. 6755 (May 1, 2020); *see* IEPA Prop. at 47. As the first condition, the Board proposed that a design “such that leachate is collected at a sump and is pumped or flows out of the CCR surface impoundment,” is required. 44 Ill. Reg. 6755 (May 1, 2020); *see* IEPA Prop. at 47.

Responding to Midwest Generation, Mr. Buscher stated that the leachate collection and removal system would be allowed to pump fluids removed from the CCR impoundment back into it. IEPA Resps. 1st Supp. at 15; *see* MG Questions at 6.

Protective Layer. The Board proposed in subsection (a)(8) that the leachate collection and removal system must “have a protective layer or other means of deflecting the force of CCR pumped into the CCR surface impoundment.” 44 Ill. Reg. 6756 (May 1, 2020); *see* IEPA Prop. at 47.

Responding to Midwest Generation, Mr. Buscher stated that a geotextile layer would satisfy this requirement. IEPA Resps. 1st Supp. at 16; *see* MG Questions at 7.

Stating that “one of the most effective energy dissipators for flows into standing water in a surface impoundment is the impounded water itself,” Midwest Generation asked whether IEPA intends “that future CCR surface impoundments contain no or minimal standing water?” MG Questions at 7. Mr. Buscher responded that “[t]he amount of standing water in a CCR impoundment is an operational parameter which the owner or operator needs to consider in the design of the impoundment.” IEPA Resps. 1st Supp. at 16.

Closure and Post-Closure Care. IEPA proposed to add a subsection (a)(10) requiring that, “at a minimum, the leachate collection and removal system must be operated to remove free liquids from the CCR surface impoundment at the time of closure and during post-closure care.” PC 115 at 49 (final proposed language); PC 120 at 72. As discussed under operating characteristics of new CCR surface impoundments, the Board accepts IEPA’s addition.

Slope Maintenance

Section 845.430 requires the slopes and pertinent surrounding areas of the CCR surface impoundment to be designed, constructed, operated, and maintained with the following forms of slope protection: a vegetative cover consisting of grassy vegetation; an engineered cover consisting of a single form or combination of forms of engineered slope protection measures; or a combination of the veg and engineered forms of cover. *See* IEPA Prop. at 47-48; SR at 19. Additionally, the proposed rule at Section 845.430(b) specifies performance standards applicable to all forms of slope protection cover. These standards address: installation and maintenance of protection cover; protection against surface erosion, wave action, and adverse effects of rapid drawdown; allowance for the observation of and access during routine and emergency events; and removal of woody vegetation from the slopes or pertinent surrounding areas.

The Board asked IEPA to explain what is included in the “pertinent surrounding area.” Board Questions at 9. IEPA responded that it “would include the drainage ways which convey storm water drainage away from the CCR surface impoundments.” IEPA Resps. at 163.

Midwest Generation asked IEPA how it determined the half-inch standard for removal of woody vegetation. Tr. 8/12 at 168-69. IEPA responded that the size standard for woody vegetation is based on USEPA’s proposed revisions to the structural integrity criteria. PC 49, Att. 1 at 3, citing, 11612 (amending 40 CFR 257.73(a)(4)(ii)(D), 257.74(a)(4)(ii)(2)(D)). Although IEPA acknowledged that USEPA has not adopted these revisions, it argued that “such performance standards are protective and thus appropriately included as required slope maintenance and protection measures.” PC 49, Att. 1 at 3. IEPA elaborated that there are specific reasons to prevent growth of trees and other significant vegetation: “1) root growth that can damage the cover by shortening seepage pathways, 2) creation of voids from decayed roots, and 3) expansion of cracks and conveyance channels.” PC 49, Att. 1 at 4. IEPA concluded that “limiting growth to 1/2 inch diameter prevents root depth that can compromise the cover of the CCR surface impoundment.” *Id.*

Board Findings. The Board concludes that Section 845.430 proposes slope protection and maintenance consistent with federal requirements. The Board submits its proposal without substantive revision to second-notice review.

Classifications and Assessments Generally

The proposed rules under Subpart D specify requirements for three types of assessments: hazard potential classification assessment; structural stability assessment; and safety factor assessment. The participants raised concerns regarding two issues that are generally applicable

to all three assessments: the submission of the assessments in permit applications to facilitate public participation; and the proposed frequency for conducting the assessments. Under Subpart B, above, the Board discussed and resolved the issue of submitting assessments in permit applications. Therefore, the Board addresses the issue of frequency before summarizing principal elements of the three assessments.

Frequency of Conducting Subpart D Assessments

Industry participants questioned the proposed annual frequency for conducting all three assessments. Dynegy argues that IEPA has not provided “any support for deviating from the [federal] CCR Rule’s requirement to perform an assessment every five years.” PC 126 at 16; *see* 40 CFR 257.73(f)(3); 80 Fed. Reg. 21377 (Apr. 17, 2015). CWLP asserts that the federal rules require classification less frequently because it documents “conditions that are unlikely to change from year to year.” PC 122 at 22-23, citing 40 CFR 257.73(d), (f).

Midwest Generation questioned whether IEPA would “consider the annual inspection by the Professional Engineer required by Section 845.540(b) to cover this assessment?” Midwest Generation Questions at 7. Mr. Buscher responded that the annual inspection “could identify any changes of conditions which would require the assessment to be updated.” IEPA Resps. 1st Supp. at 17. Dynegy’s expert, Dr. Bonaparte, also acknowledged that these required inspections must address elements including “[t]he annual hazard potential classification.” Dynegy Test. at 21; *see* IEPA Prop at 61 (proposed Section 845.540(b)(1)(D)). If the inspecting engineer finds that the facility deviates from conditions used in the assessment, “the engineer will be obligated to address them in the annual inspection report.” Dynegy Test. at 21; *see* IEPA Prop. at 61-62 (Section 845.540(b)(2)). The owner or operator or IEPA would then address the deviations, “and updated assessments could be prepared at that time.” Dynegy Test. at 21; *see* IEPA Prop. at 62 (proposed Section 845.540(b)(5)). An inspecting engineer may also find that a facility does not deviate from conditions used in a previous assessment. CWLP notes IEPA’s view that, in that case, requiring annual submission is not burdensome “because a facility may simply recycle its previous year’s plan if there have been no changes.” PC 122 at 23.

The Environmental Groups, however, argue that less frequent assessment would limit public participation and may risk public safety. “Conditions at an impoundment can change as erosion, flooding, and infrastructure around the pond occurs.” PC 135 at 29. Without an annual classification, they argue that IEPA and the public “are left in the dark.” *Id.* Environmental Groups add that “the mandate of the Coal Ash Pollution Prevention Act (CAPPA) is for the Illinois regulations to be ‘at least as’ protective as the federal rules. There is no such mandate that they be the same.” PC 135 at 39, citing 415 ILCS 5/22.59(g)(1) (2018).

IEPA’s expert, Mr. Buscher, acknowledged that the federal CCR rules do not require annual assessments. However, he noted that under the proposed rules, “[t]hese assessments would then be completed on the same schedule as the annual inspections required by Section 845.540 and could take into account any changes in conditions revealed by the annual inspections.” He maintained that the annual inspection “could identify any changes of conditions which would require the assessment to be updated.” IEPA Resps. 1st Supp. at 17, IEPA Resps. at 127; *see* CWLP Questions at 1 and IEPA Resps. 1st Supp. at 17-18.

Board Findings. The Board finds that the record, including Mr. Buscher’s testimony, supports IEPA’s proposal to require annual assessment. Because the required annual inspection may identify changes that warrant updating an assessment, complete reassessment need not automatically occur every year. IEPA does not anticipate that requiring annual assessments would increase costs. IEPA Resps. at 128-29. IEPA acknowledged that the requirement could increase cost “if conditions changed to the point that significant changes in the assessments were required.” IEPA Resps. at 127. The Board considers these factors, including erosion and development near the surface impoundment, as factors that can appropriately warrant a reassessment during both operation and post-closure care period.

Based on these considerations, the Board declines to revise its proposal and concludes to submit its proposed requirement for an initial and then annual assessment to second-notice review without substantive revision.

Hazard Potential Classification Assessment

Section 845.440 requires the owner or operator of a CCR surface impoundment to complete an initial as well as annual hazard potential classification assessment to classify the impoundment as either a Class 1 or Class 2 CCR surface impoundment. For each assessment, the rules require the documentation of the basis for hazard potential classification along with a certification from a qualified professional engineer that the assessment was conducted in accordance with the requirements of this Section. The proposed rules also provide timeframes for submission of the assessments and certifications. Finally, the rules clarify that the hazard potential classification requirements apply to all CCR surface impoundments, except for those impoundments that are defined as incised CCR surface impoundments.

The Board concludes that Section 845.440 proposes hazard potential classifications consistent with federal requirements. The Board, however, makes a non-substantive revision to Section 845.440(a)(2) and (b). In adopting IEPA proposal to first notice, the Board has generally struck the phrase “of this Section” as unnecessary in cross referencing the specific provisions. However, in Section 845.440(a)(2) and (b), the Board believes the phrase “of this Section” clarifies the requirements applicable to the specified impoundments and restores it to that section in its second-notice proposal. The Board submits Section 845.440 without any other revisions for second notice.

Structural Stability Assessment

Section 845.450 requires an owner or operator of a CCR surface impoundment to conduct initial and annual structural stability assessments to determine “whether the design, construction, operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted engineering practices for the maximum volume of CCR and CCR wastewater that can be impounded in the impoundment. The assessment must include documentation of whether the CCR surface impoundment has been designed, constructed, operated, and maintained to adequately address seven specific structural stability elements listed in the proposed Sections

845.450(a)(1) through (a)(7). These elements include foundations and abutments, slope protection, dikes, spillways, hydraulic structures, and downstream slopes.

If the annual assessment identifies any structural stability deficiencies associated with the CCR surface impoundment, in addition to recommending corrective measures, the rules require the owner or operator to submit a construction permit application including documentation detailing proposed corrective measures. Further, the rules require a certification from a qualified professional engineer that the assessment was conducted in accordance with the requirements of this Section. The proposed rules also provide timeframes for submission of the assessments and certifications. Finally, the rules clarify that the structural stability assessments apply to all CCR surface impoundments, except for those impoundments that are defined as incised CCR surface impoundments.

The Board concludes that Section 845.450 proposes structural stability assessments consistent with federal requirements. Under “Classifications and Assessments Generally” above, the Board declined to revise its proposal. The Board, however, makes a non-substantive revision to Section 845.450(f), which changed at second notice to 845.450(e). In adopting IEPA proposal to first notice, the Board has generally struck the phrase “of this Section” as unnecessary in cross referencing the specific provisions. However, in Section 845.440(e), the Board believes the phrase “of this Section” clarifies the requirements applicable to the specified impoundments and restores it to that section in its second-notice proposal. The Board submits its proposal without substantive revision to second-notice review.

Safety Factor Assessment

Section 845.460 requires an owner or operator of a CCR surface impoundment to conduct an initial and annual safety factor assessments for each CCR surface impoundment. The assessments must document whether the safety factors determined by using appropriate engineering calculations for each CCR surface impoundment achieve the proposed minimum safety factors for the critical cross-section of the embankment, i.e., the cross-section anticipated to be the most susceptible of all cross-sections to structural failure based on appropriate engineering considerations, including loading conditions. The proposed minimum safety factors include static safety factors under different loading conditions, seismic safety factor and liquefaction safety factor for dikes constructed of soils that are susceptibility to liquefaction. These minimum safety factors range from 1.00 to 1.50.

Additionally, the rules require a certification from a qualified professional engineer that the safety factor assessment was conducted in accordance with the requirements of this Section. The proposed rules also provide timeframes for submission of the assessments and certifications. Further, the rules prohibit placement of CCR in a new CCR surface impoundment until the owner or operator of the impoundment documents that the calculated factors of safety achieve the minimum safety factors. Also, if an owner or operator of a CCR surface impoundment fails to complete a timely safety factor assessment or demonstrate achievement of the minimum safety factors, the CCR impoundment is subject to the closure or retrofit requirements of Section 845.700. Finally, the rules clarify that the proposed safety factor requirements apply to all CCR

surface impoundments, except for those impoundments that are defined as incised CCR surface impoundments.

Mr. Rehn, testifying for the Environmental Groups, acknowledged that “assumptions are necessary in most engineering assessments” to account for factors that are not known. Rehn Test. at 6. However, he argues that these assumptions may affect results and whether impoundments meet the requirements of these assessments. *Id.* He argues that “a third party must review the assessment to see if the assumptions are reasonable and the calculations are otherwise accurate.” *Id.* The Board asked Mr. Rehn why the required certification by a professional engineer and subsequent review by IEPA are “not sufficient to ensure accuracy of the calculations.” Board Questions 2 at 2. He responded with the concern that IEPA may accept certifications without “reviewing the assumptions and calculations behind the safety factors.” Rehn Resps. at 1. Without third-party review “there is a greater chance that safety factors may not be accurate.” *Id.* He recommends requiring this additional review in Part 845. *Id.*

Board Findings. The Board concludes that Section 845.460 proposes safety factor assessments consistent with federal requirements. Mr. Rehn’s testimony fails to describe who would properly be considered “third-party reviewers” and how that review process would affect the permit process timeline. Therefore, the Board declines to revise its proposal regarding third-party review. Under “Classifications and Assessments Generally” above, the Board declined to revise its proposal regarding frequency of conducting the assessment. The Board submits its proposal without substantive revision at second notice.

Subpart E: Operating Criteria

Subpart E specifies the operating criteria for CCR surface impoundments. Measures in the Subpart include requiring the owner or operator to create and implement a fugitive dust control plan, as well as submit an annual fugitive dust control report. Additionally, the Subpart requires that the owner or operator prepare and maintain an inflow design flood control system plan, an emergency action plan, and a safety and health plan. The Subpart also requires that the owner or operator submit an annual consolidated report to IEPA and have qualified professional engineers regularly inspect its CCR surface impoundments.

At issue with Subpart E are concerns over three plans: the efficacy and availability of the fugitive dust control plan; the scope of the emergency action plan; and the stringency of the safety and health plan. Issues were also raised about the timing of both inspections and inspection report submittals.

CCR Fugitive Dust Control Plan

Under subsection (a) of Section 845.500, the owner or operator of any new, existing, or laterally expanded CCR surface impoundment must “adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR surface impoundments, roads, and other CCR management and material handling activities.” Subsection (b) addresses the requirements concerning the CCR fugitive dust control

plan. And subsection (c) requires the owner or operator to prepare and submit to IEPA an annual CCR fugitive dust control report.

The Environmental Groups and individual members of the public raise four concerns regarding the proposed dust control plan requirements: (1) no specific dust control measures are required; (2) enforcement will be inadequate because it relies on complaints from members of the public, which the owner or operator need only enter into a log to be shared annually with IEPA; (3) no air monitoring program is required; and (4) no adequate opportunity is ensured for either IEPA to review or the public to comment on the dust control plan before IEPA issues the operating permit. The Board discusses these issues and makes its findings below.

Dust Control Measures. The Environmental Groups argue that “[o]nce in the air, fugitive dust can both impact workers on-site and migrate off-site, as IEPA has acknowledged, and robust fugitive dust controls are therefore essential to protect both workers and nearby communities.” PC 124 at 62. According to the Environmental Groups, the proposed rules should require “minimum dust control measures” at all CCR surface impoundment sites rather than allowing each owner or operator to choose its controls. *Id.* They suggest that the Board require such controls as “non-toxic soil stabilizers or dust suppressants, on-site water trucks, off-site sweepers, track-out controls, covers or soil binders for covering stored or stockpiled soil, and vehicle covers during wind events.” *Id.* at 63.

IEPA explains that it did not consider requiring specific dust control measures because Section 845.500(b)(1)’s examples represent the currently accepted hazard mitigation procedures. Exh. 2 at 113. Further, IEPA emphasizes the legal repercussions of not controlling CCR dust:

Each owner/operator will be responsible for ensuring that the hazard mitigation systems implemented are effective for the work being performed. If the hazard mitigation system is not effective, then the owner/operator are directly violating federal worker safety regulations under [the Occupational and Safety Health Act] and can be penalized by the US Department of Labor Occupational Safety and Health Administration [OSHA]. *Id.*

IEPA elaborates that fugitive dust emissions from CCR surface impoundment sites are subject to OSHA’s regulations at 29 C.F.R. 1910 and 1926, “which determine the entirety of the laws and regulations providing workers safe work environments in the USA.” *Id.* at 115. IEPA adds that CCR surface impoundments are also subject to the Board’s visible and particulate matter (PM) regulations at 35 Ill. Adm. Code 212. *Id.* at 106.

Board Findings. The proposed fugitive dust control plan provisions mirror USEPA’s CCR rules at 40 C.F.R. § 257.80. Like its federal counterpart, the proposed rules do not specify which dust control measures must be implemented. Rather, they provide, by way of example, a non-exhaustive list of dust control measures that “may be appropriate” for the dust control plan (Section 845.500(b)(1)). But the rules do require the owner or operator to select those control measures that are “most appropriate for site conditions” and explain “how the measures selected are applicable and appropriate for site conditions.” *Id.* The rules also require the owner or operator to obtain a qualified professional engineer’s certification that the plan “meets the

requirements of this Section” (Section 845.500(b)(7)), which includes the provision that the owner or operator “must adopt measures that will effectively minimize CCR from becoming airborne at the facility” (Section 845.500(a)).

However, the Board shares the concerns raised by the Environmental Groups and members of the public but finds that requiring “one-size-fits-all” dust control measures for every CCR surface impoundment site is not supported by this record. Instead, allowing the owner or operator to tailor the plan’s control measures to facility-specific conditions, including the type of work being done, and having that plan QPE certified as compliant, offers a better way to protect workers and nearby communities.

Even with the QPE certification, the dust control plan will be reviewed by IEPA for compliance with these rules. 8/3/20 IEPA Ans. at 111. Section 845.200(b)(1) provides that IEPA “must not issue” a permit “unless the applicant submits adequate proof that the CCR surface impoundment will be constructed, modified, or operated so as not to cause a violation of the Act or Board rules.” If a third party disagrees with IEPA’s permit issuance against these standards, it may appeal to the Board for review of IEPA’s determination (Section 845.270(e)(2)).

Additionally, under Section 31(d)(1) of the Act (415 ILCS 5/31(d)(1) (2018)), “any person” may file with the Board a complaint against an owner or operator allegedly violating these rules or, for example, Section 9(a) of the Act, which prohibits causing, threatening, or allowing the emission of any contaminant into the environment so as to cause or tend to cause air pollution (415 ILCS 5/9(a) (2018)). Further, as noted by IEPA, the Board’s Part 212 air regulations and OSHA’s regulations provide an additional layer of protection.

Board Findings. For all these reasons, the Board declines to prescribe which dust control measures must be implemented at all CCR surface impoundments. However, as noted above, the Board will open a sub-docket to investigate fugitive dust monitoring plans for areas surrounding CCR surface impoundments.

Fugitive Dust Complaints. The Environmental Groups argue that the proposed rules’ approach to addressing fugitive dust improperly relies on complaints from members of the public. PC 124 at 64. The rules would require only that the fugitive dust control plan have a procedure for logging complaints: “The CCR fugitive dust control plan must include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility” (Section 845.500(b)(2)). The Environmental Groups maintain that requiring facilities to merely log these complaints is inadequate. PC 124 at 64.

According to the Environmental Groups, “[v]isual observations cannot detect dangerous fine particulate matter, which is not visible to the eye, and community members cannot be expected to be present at all times when fugitive dust emissions occur.” PC 124 at 64. They emphasize the time lag between when complaints are made and when the facility submits the log of those complaints to IEPA in the annual report. *Id.* Further, the proposed rules do not require the owner or operator to attempt to remediate any fugitive dust. *Id.*

The Environmental Groups state that fugitive dust, especially during closure by removal, poses significant threats to human health—both to on-site workers and those people living in neighborhoods near the CCR surface impoundments. PC 124 at 64. To avoid leaving “communities vulnerable to harmful air pollution from fugitive dust,” the Environmental Groups request that the Board require facilities to monitor for fugitive dust and respond to complaints from the public. *Id.* at 65.

IEPA confirms that the rules require the owner or operator to “keep a log of citizen complaints and summary of corrective actions taken in the annual fugitive dust control report,” but not to investigate the complaints. Exh. 2 at 113. IEPA witnesses reiterated that resolving fugitive dust complaints from the public would fall under the auspices of the facility. Aug. 12 TR at 193-194. IEPA added that members of the public also may make fugitive dust complaints to IEPA directly. *Id.* at 195.

Board Findings. The Board agrees with the Environmental Groups. Having the owner or operator annually submit to IEPA a record of all citizen complaints is insufficient to allow for IEPA to effectively oversee potential dust control problems in communities neighboring CCR surface impoundments. Accordingly, at second notice, the Board requires quarterly submission of the complaint log to IEPA (Section 845.500(b)(2)(B)). The Board also adds to the information that the log must include for each complaint received: the date of the complaint, the date of the fugitive dust event, the name and contact information of the complaining member of the public, if given, any and all actions taken by the owner or operator to assess and resolve the complaint (Section 845.500(b)(2)(A)). And the annual fugitive dust control report must include the four quarterly logs (Section 845.500(c)). These additional requirements will advance the purpose of Section 22.59 of the Act: “to promote a healthful environment, including clean water, air, and land, meaningful public involvement, and the responsible disposal and storage of coal combustion residuals, so as to protect public health and to prevent pollution of the environment of this State.” 415 ILCS 5/22.59(a).

The Environmental Groups also request that the term “citizen complaints” be changed to reflect that one need not be a U.S. citizen to make a complaint about CCR fugitive dust. Aug. 12 TR at 193. IEPA agrees that complaints from “members of the public” is “more inclusive.” PC 120 at 72. For second notice, the Board replaces “citizen” with “member of the public” in Section 845.500(b)(2).

Air Monitoring for Fugitive CCR Dust. To prompt fugitive dust inspections and remediations, the Environmental Groups ask that the Board require facilities to install air monitors for fugitive dust. PC 124 at 64. They request “baseline monitoring as well as monitoring during the entire duration of removal, continuous measurements for PM₁₀ and PM_{2.5} as well as periodic sampling of metals and radionuclides from the dust collected in the PM monitors, monitoring locations for both fixed and mobile monitors, defined sampling methods and schedules.” *Id.* The Environmental Groups propose no rule language for this air monitoring.

IEPA does not respond specifically to the Environmental Groups’ air monitoring recommendation but IEPA’s Lauren Martin testified that the proposed rules, like USEPA’s rules,

rely on the worker-safety measures provided by OSHA’s regulations at 29 C.F.R. 1910 and 29 C.F.R. 1926:

Worker safety protections when properly implemented will also protect the surrounding communities by controlling the hazards within the worksite. Worker safety protections on site, by extension, prevents the hazardous materials from traveling offsite in quantities that could impact the health and wellbeing of the surrounding community. Martin PFT at 2.

She added that hazardous substances found in CCR—like arsenic, beryllium, lead, cadmium, and silica—are covered by OSHA’s regulations at 29 C.F.R. 1910. *Id.* at 3. These regulations address hazardous substance information and technical guidelines, hazard mitigation, engineering controls, administrative controls, and worker air quality and medical monitoring. *Id.* at 3-4.

Board Findings. The Board declines to require air monitoring of fugitive dust from CCR surface impoundment sites. This record lacks enough information to establish either the necessity or the requisite details of an air monitoring program. The proposed fugitive dust control provisions, coupled with OSHA regulations and the Board’s visible and PM regulations, will serve to protect both on-site workers and nearby communities. In reaching this conclusion, the Board proposes to add this subject to the sub-docket that will be opened by the Clerk. The Board encourages participants to provide more detailed information, evidence, and proposals for air monitoring of fugitive dust from CCR surface impoundment sites.

Opportunity for IEPA to Review and the Public to Comment on the Fugitive Dust Control Plan. The Environmental Groups are concerned that IEPA might issue an operating permit even though IEPA never reviewed, and the public never had an opportunity to comment on, the fugitive dust control plan. Aug 12 TR at 83-84, 182,184-187. IEPA responds by proposing additional language for Section 845.500(b)(6) that would require the owner or operator to make its fugitive dust control plan available to IEPA “at any time upon request.” PC 120 at 73. As explained above, however, the Board now requires that the fugitive dust control plan be included in the operating permit application (not only the construction permit application), making IEPA’s proposed amendment here unnecessary.

But that still leaves the question of the public’s opportunity to comment on the fugitive dust control plan. For this, IEPA proposes a different change to Section 845.500(b)(6):

The owner or operator must place the initial and any amendments to the fugitive dust control plan in the facility’s operating record as required by Section 845.800(d)(7). The most recent fugitive dust control plan must be placed in the facility’s operating record and available on the owner or operator’s CCR website prior to filing a permit application pursuant to this Part. PC 49, Att. 3 at 4.

Board Findings. IEPA explains that this change will “ensure that the Fugitive Dust Control Plan is available when a permit application is filed.” *Id.* The Board agrees and, with minor clarifying edits, proposes the change for second notice.

As proposed at first notice, the owner or operator must post the fugitive dust control plan to its publicly accessible website within 30 days after adding the plan to its operating record (Sections 845.800(d)(7), 845.810(d)). This 30-day deadline remains but, with the addition to Section 845.500(b)(6), the owner or operator must also post the fugitive dust control plan to its publicly accessible website *before* submitting the permit application to IEPA. In this way, because the 30-day public comment period cannot begin until IEPA gives public notice of the completed permit application and its tentative determination (Sections 845.260(b), (c)(1)), the dust control plan is assured of being publicly available for the entire public comment period.

Inspection Requirements for CCR Surface Impoundments.

CWLP requested that IEPA clarify the requirements for owner or operators when performing inspections after a storm event. PC 122 at 22. IEPA proposed the addition of the following language to Section 845.540(a):

- 4) If a 25-year, 24-hour storm is identified more than 48 hours before the next scheduled weekly inspection, an additional inspection shall be conducted within 24 hours of the end of the identified storm event, prior to the scheduled seven-day inspection.

Board Findings. The Board finds the addition of subsection(a)(4) acceptable and adds it to Section 845.540 at second notice.

Submittal of Annual Consolidated Report

In pre-filed questions, the Board asked IEPA to clarify whether the annual inspection report will be submitted to the Agency in addition to being filed in the operating record. Hearing Officer Order 6/23/20 at 9. To address the question, IEPA proposed the following changes to 845.540(b)(3) and 845.550(b):

Section 845.540

- b) Annual inspections by a qualified professional engineer.
- 3) By January 31 of each year, the inspection report must be completed and ~~submitted~~ included with the annual consolidated report required by Section 845.550.

Section 845.550

- (b) The owner or operator of the CCR surface impoundment must submit the annual consolidated report to the Agency in addition to placing ~~place~~ the annual consolidated report in the facility's operating record as required by Section 845.800(d)(14).

Board Findings. The Board finds the changes to Sections 845.540(b)(3) and 845.550(b) acceptable.

Subpart F: Groundwater Monitoring and Corrective Action

Subpart F describes groundwater monitoring provisions and corrective action requirements. Additionally, the subpart sets groundwater protection standards that are applicable to new, existing, and inactive CCR surface impoundments. General requirements are set for groundwater monitoring for all CCR surface impoundments during their active life which includes operation, closure and post closure care. Owners or operators of CCR surface impoundments must perform hydrogeologic site characterization to determine potential contamination migration pathways. The Subpart also sets forth specific design requirements for the groundwater monitoring system, including the number of monitoring wells, their locations, and requirements for sampling and analysis of samples. Further, the Subpart lists the requirements to assess corrective measures as well as the required contents of a corrective action plan.

Groundwater Protection Standards

Section 845.600 prescribes the groundwater protection standards (GWPS) applicable to new, existing, and inactive CCR surface impoundments. The GWPS based on numeric as well as background concentrations are specified for 21 constituents, which correspond to the federal CCR rules under 40 C.F.R. 257, Appendix III and Appendix IV. Dunaway PFT at 4. The participants suggested several changes to the list of constituents.

Iron, Manganese, and Vanadium. The Environmental Groups request that the Board add iron, manganese and vanadium to list of constituents with GWPS under Section 845.600. PC 124 at 24. They rely on Mr. Hutson's explanation that GWPS must be added to the three constituents to "eliminate confusion about which parameters must be included on the list of analytes for monitoring at a CCR unit, as well as to help clarify the corrective action requirements that apply for those analytes." *Id.*, citing Exh. 15 at 8.

IEPA opposes the Environmental Groups' request to add iron, manganese and vanadium to the Section 845.600 GWPS list. IEPA notes that all three constituents were evaluated and discarded by USEPA prior to adopting the chemicals in Part 257 Appendix III and Appendix IV. PC 124 at 13 citing Hrg. Ex. 5 at 21449-21452. Further, IEPA notes that all three constituents have groundwater quality standards under Part 620, which remains generally applicable to surface impoundments.

Board Findings. The Board agrees with IEPA's assessment and declines the Environmental Groups's request to add iron, manganese, and vanadium to Section 845.600.

Turbidity. Dynegy, in pre-filed questions to IEPA, asked several questions regarding turbidity in groundwater, and its relationship to the presence of other inorganic chemical. Ex. 2 at 45. IEPA answered that turbidity can increase inorganic constituent concentrations in

groundwater. IEPA also noted that turbidity is an indicator of inadequate monitoring well design. *Id.* citing 80 Fed. Reg., 21403, (Apr. 17, 2015). In its final comments, IEPA explained, “[t]urbidity in groundwater samples comes from sediment particles in the sample, which may be derived from dissolved minerals that precipitate when they enter the monitoring well or may be particles carried into the monitoring well from some geologic formations.” PC 120 at 77. IEPA maintains, “[s]ince Part 845 requires the analysis of total constituents (no field filtering), the presence of particulate matter may interfere with obtaining accurate groundwater monitoring results. Having a turbidity analysis available for reference can help determine if such interference is likely in any given sample.” PC 120 at 76. IEPA proposes the following changes to Section 845.600(b), as well corresponding changes to Sections 845.650(a) and (b):

Section 845.600

- b) For new CCR surface impoundments, the groundwater protection standards at the waste boundary shall be background for the constituents listed in subsection (a)(1), and Calcium and Turbidity.

Section 845.650

- a) The owner or operator of a CCR surface impoundment must conduct groundwater monitoring consistent with this Section. At a minimum, groundwater monitoring must include groundwater monitoring for all constituents with a groundwater protection standard in Section 845.600, and Calcium and Turbidity. The owner or operator of the CCR surface impoundment must submit a groundwater monitoring plan to the Agency with its operating permit application.
- b) Monitoring Frequency
 - 1) The monitoring frequency for all constituents with a groundwater protection standard in Section 845.600, and Calcium and Turbidity shall be at least quarterly during the active life of the CCR surface impoundment and the post-closure care period or period specified in Section 845.740(b) when closure is by removal.
 - A) For existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for all constituents with a groundwater protection standard listed in Section 845.600(a), and Calcium and Turbidity no later than 180 days after the effective date of this Part.
 - B) For new CCR surface impoundments, and all lateral expansions of CCR surface impoundments, a minimum of eight independent samples for each background well and downgradient well must be collected and analyzed for all constituents with a groundwater

protection standard listed in Section 845.600(a), and Calcium and Turbidity during the first 180 days of sampling. PC 120 at 77-78.

Board Findings. The Board agrees with IEPA’s suggestion—in response to Dynegey’s questions—to include turbidity as a general groundwater chemistry constituent. As noted by IEPA, turbidity not only relates to the concentration of other inorganic constituents listed in Section 845.600, but also indicates performance of the monitoring well and the need for redevelopment of the well. Therefore, the Board at second notice amends Sections 845.600(b) and 845.650(a) and (b) to include turbidity as a monitoring constituent.

General Requirements

Completion of Sampling. Midwest Generation argues that the phrase “completion of sampling” is ambiguous, Midwest Generation proposes changing that phrase to “receipt of all analytical results.” PC 125 at 15, and Appendix A at 1.

IEPA opposes this proposed change, arguing that the revision could potentially allow facilities four months to submit sampling data to IEPA rather than the 60 days required under the section. PC 129 at 16. “The original 60 days proposed by the Agency for submittal of the sampling results to the Agency after the event occurs should be plenty of time based upon the Agency’s familiarity with laboratory turn-around times.” *Id.*

Board Findings. The Board finds that the language as originally proposed by IEPA provides sufficient time for facilities to submit sampling data to IEPA. Therefore, the Board will not accept Midwest Generation’s proposed revision.

Increases Above Groundwater Protection Standards. Dynegey proposes changes to Sections 845.610 (b)(3)(B) and (e)(3)(E) that would alter statistically significant increase over “background levels” to statistically significant levels over “the groundwater protection standard” (GWPS). Dynegey also proposes similar changes to Section 845.640(h). PC 126, Appen A at 27-28, 35. Dynegey explains, “[a] statistically significant increase over background does not trigger any requirement under Part 845 and is not necessary to ensure compliance with the CCR Rule. As discussed in Dr. Bradley’s testimony and Mr. Hagen’s testimony, both on behalf of Dynegey, corrective action should be required when a statistically significant level over a groundwater protection standard has been detected.” *Id.*

IEPA opposes this revision, stating, “[i]n all instances, the groundwater monitoring results must be compared with the background levels for a CCR surface impoundment.” PC 129 at 17. Further, IEPA explains how exceedances above background levels work under the proposed rules. First, for new CCR surface impoundments, IEPA notes that “the groundwater protection standard is the background concentration (Section 845.600(b)), therefore a statistically significant level over background will be a triggering event for an alternative source demonstration or an assessment of corrective measures.” *Id.* Next, “for existing and inactive CCR surface impoundments that have constituent background concentrations above the numerical groundwater protection standards (Section 845.610(a)(2)), a statistically significant level over background for those constituents will be a triggering event for an alternative source

demonstration or an assessment of corrective measures. *Id.* at 17-18. Finally, for existing and inactive CCR surface impoundments that have constituent background concentrations below the numerical GWPS (Section 845.610(a)(1)), IEPA asserts that since the GWPS are based on human health and environmental considerations any increase (not statistically significant increase) above the GWPS must trigger an alternative source demonstration or an assessment of corrective measures. *Id.* at 18.

Board Findings. The Board notes that under the proposed rules if the applicable GWPS is based on background concentration, then a statistically significant increase above the background triggers an alternate source demonstration (ASD) or assessment of corrective action measures. However, if applicable GWPS is based on human health and environmental consideration, relying on statistically significant increase above the standard for triggering ASD or corrective action measures is inappropriate because such reliance, as noted by IEPA, undermines the health or environmentally based GWPS. Therefore, the Board finds that the change proposed by Dynegy is inappropriate and declines to make the proposed revisions.

Potentiometric Surface Map. Dynegy asks the Board to reduce the requirement in Section 845.610(e)(3)(C) which, as proposed by IEPA, requires facilities to create a potentiometric surface map for each groundwater elevation sampling event required by Section 845.650(b)(2). PC 126 Attachment A at 27. Dynegy argues that it would be burdensome to prepare potentiometric surface maps for each daily elevation measurement, which it has proposed instead of the monthly measurement proposed by IEPA. Therefore, Dynegy proposes alternate language for Section 845.610(e)(3)(C) that would require submitting one potentiometric surface map in the annual report. *Id.*

IEPA opposes creating a potentiometric surface maps based on daily elevation measurements at only two wells, one upgradient and one down gradient. PC 129 at 19. IEPA argues that it would be impossible to create an accurate potentiometric map from only two daily groundwater elevation levels. *Id.* “[E]very other groundwater elevation on the map would have to be extrapolated from those two elevations.” *Id.* at 19-20. As a potential compromise, IEPA suggests that rather than daily, a potentiometric map could be created using either monthly or quarterly groundwater elevation data. *Id.* IEPA “believes potentiometric surface maps must be prepared and included for each full groundwater elevation monitoring event which occurs over a year, whether it be monthly or quarterly.” *Id.*

Board Findings. The Board finds the compromise suggested by IEPA is appropriate in this section. The rules require monthly groundwater elevation monitoring and the Board finds creating potentiometric surface maps on a monthly basis reasonable. Therefore, the Board declines to make any changes to Section 845.610(e)(3)(C).

Hydrogeologic Site Characterization

Climatic Aspects. In Section 845.620(b)(2), Dynegy proposes deleting the phrase “climatic aspects” from the requirements of the Section and instead substitutes “aquifer thickness, groundwater flow rate, and groundwater direction.” PC 126 Attachment A at 28. Dynegy argues that “climatic aspects” is a vague and ambiguous phrase. *Id.* at 29.

IEPA objects to the removal and substitution stating that “climatic aspects” is a common phrase used in environmental documents. PC 129 at 20. “Climatic aspects include, but are not limited to, precipitation amounts and temperatures and are directly related to hydrogeologic information.” *Id.* Dynegy’s proposed substitutions are addressed in other sections of the rules and are inappropriate replacements for climatic aspects, argues IEPA.

Board Findings. The Board agrees that the phrase “climatic aspects” is a common term of art that include temperature, atmospheric pressure, precipitation, and humidity that are directly related to hydrogeologic information. Therefore, the Board declines to make the changes suggested by Dynegy.

Use of Specific Distance instead of “Nearby.” Dynegy proposes revisions to 845.620(b)(3), (4), (5) and Midwest Generation also proposes a revision to 845.620(b)(3) that would set a specific distance whereby facilities must identify surface water bodies, drinking water intakes, pumping wells and dedicated nature preserves. PC 126, Attachment A at 29, PC 126 at 16. Dynegy argues that the term “nearby” in the rules is vague and ambiguous. PC 126 Attachment A at 29. Midwest Generation argues that a distance of 2,500 feet should be used rather than the term “nearby.” PC 125 at 16. “The area should be defined to be within 2,500 feet of the CCR surface impoundment, because that is the same distance required for Potable Water Supply Well Surveys.” *Id.* Midwest Generation asks the Board to add language to clarify that available site-specific or literature reviews may be used to fulfil the information requirements in Section 845.620(b)(13) and (b)(15). *Id.*

IEPA objects to creating specific distance limits in these sections as it purposely proposed language that “left this requirement more open-ended so the data collection could be based on the specific site characteristics.” PC 129 at 20. Decisions on the best distance used to develop the model will be site-specific and will depend on specific hydrogeologic factors, not an arbitrary fixed distance. *Id.* at 20, 21. As to Midwest Generations’ request to include local information, IEPA explains that it might be acceptable in certain circumstances, but those scenarios are limited to where the local information acts as supplemental information only. *Id.* at 22. “Literature reviews can be included in hydrogeologic site characterizations and the Agency does not object to supplemental usage of literature reviews. The Agency believes, however, that physical, site-specific data is the best information to characterize a site.” *Id.*

Board Findings. The Board shares IEPA’s concerns with specifying an arbitrary distance for identifying surface water bodies, drinking water intakes, pumping wells and dedicated nature preserves. Such identification, the Board notes, must be based on site-specific characteristics to ensure that all water bodies and activities (pumping) affecting the hydrogeologic conditions at CCR Surface Impoundment sites are considered during the site investigation. Therefore, the Board declines to replace the term “nearby” with an arbitrary distance in Sections 845.620(b)(3), (4), (5).

Regarding the use of available site-specific or local information, the Board notes that Section 845.210(d) sets the parameters for the use of previous assessments and investigations. As long as the site-specific or local information falls within the parameters of Section 845.210(d),

such information may be used to meet the requirements of Sections 845.620(b)(13) and (15). However, the Board agrees that site-specific data is best suited for site characterization under Section 845.620. Therefore, the Board declines to make the changes proposed by Midwest Generation to 845.620(b)(13) and (b)(15).

Groundwater Monitoring System

Representative Background Samples. In post-hearing comments, the Environmental Groups express concern regarding proposed provisions under Sections 845.630(a)(1) and (c)(2) that require the groundwater monitoring system to yield samples that “[a]ccurately represent the quality of background groundwater that has not been affected by leakage from a landfill containing CCR or CCR surface impoundment.” PC 124 at 21-22. They argue that the proposed language raises the risk of inconsistent interpretations creating potential legal battles because the phrase “landfill containing CCR” is not defined in the rules or the Act. *Id.* at 21. This may lead to “CCR-contaminated groundwater being deemed “background” - leading to corrective action never being triggered or, if triggered, requiring the groundwater be restored only to already-polluted levels.” *Id.* at 22. Therefore, the Environmental Groups urge the Board to amend proposed Section 845.630(a)(1) and (c)(2) to provide that background wells must represent the quality of background groundwater that has not been affected “by CCR” rather than “by leakage from a landfill containing CCR or CCR surface Impoundment.” *Id.*

IEPA notes Part 845 is primarily designed to regulate CCR surface impoundments. Although “it may be necessary for owners and operators to monitor groundwater down gradient of other sources to distinguish between contaminants originating from a CCR surface impoundment and those originating from another source, for example: a coal pile”, IEPA maintains that “other sources of groundwater contamination should be addressed under other remedial programs.” PC 120 at 13. IEPA asks that the Board not accept the proposed revisions. *Id.*

Board Findings. The proposed rules are focused on CCR surface impoundments. The groundwater monitoring system must yield samples representing background groundwater quality that has not been affected by leakage from the subject CCR surface impoundment. If CCR constituents are detected in the background wells, the onus is on the owner or operator to demonstrate that such detection is not due to leakage from the CCR surface impoundment. If upgradient groundwater contamination is being caused by sources other than the CCR surface impoundment, as noted by IEPA, it should be addressed under other remedial programs or enforcement actions. The Board declines to make the changes recommended by the Environmental Groups to Sections 845.630(a)(1) other than deleting the phrase “landfill containing CCR or” because CCR landfills are not regulated under the proposed Part 845.

Monitoring of Porewater Elevation Using Piezometers. The Environmental Groups’ witness, Mark Hutson, recommends the addition of a provision under Section 845.630(a) to require the owner or operator of a CCR impoundment “install a monitoring system capable of characterizing the elevation of liquid within the unit as well as the chemistry of leachate collected from near the bottom of the CCR unit during each monitoring event.” Exh. 14, Hutson PFT at 12-13. He explains that the ongoing measurements of pore water elevation using

piezometers in CCR surface impoundments is needed in order to properly determine groundwater flow directions and the amount of separation between the ash in the impoundments and the elevation of the water table or uppermost zone of saturation. This recommendation, Hutson notes, may be readily accomplished by establishing a staff gauge in the unit to measure the elevation; and constructing one or more piezometers within the waste for measuring subsurface or pore water elevation. Exh. 15, Hutson Ans. at 50. Environmental Groups' witnesses, Scott Payne and Ian Magruder argue, in their pre-filed testimony and at hearing that facilities with CCR surface impoundments should be required to install piezometers to conduct daily monitoring. Exh. 19 at 19.

CWLP argues it is not safe or feasible to install piezometers within active surface impoundments. PC 122 at 11.

IEPA agreed to requiring monitoring of water elevation in the CCR surface impoundment. But, it recommends against requiring the monitoring of porewater elevation. According to IEPA, installing piezometers within CCR surface impoundments comes with several issues, including installation in standing water and ongoing access to the piezometers at impoundments still in use. PC 120 at 14-15. Additionally, IEPA asserts that piezometers may pose problems with the closure and placement of the final cap. Therefore, IEPA objects to this recommendation. PC 120 at 14-15. CWLP agrees with IEPA's position on porewater monitoring. CWLP argues it is not safe or feasible to install piezometers within active surface impoundments PC 122 at 11.

Board Findings. The Board agrees that information should be collected to accurately determine the direction of groundwater flow underlying the CCR surface impoundments. Therefore, based upon IEPA's recommendation, the Board has already accepted for second notice the requirement to monitor water elevation in CCR surface impoundments. However, regarding monitoring of porewater elevation using piezometers, the Board shares IEPA's and CWLP's concerns associated with the installation and monitoring of piezometers in active surface impoundments. The Board agrees with CWLP that installing piezometers within the impoundments may create groundwater contamination pathways by damaging the liner. The Board is also reluctant to mandate the use of a technology which is not commonly employed in surface impoundments. Although piezometers are commonly used at dry disposal sites like landfills, Mr. Hutson admitted that he is not aware of any installation of piezometers in CCR surface impoundments with standing water. 9/29/20 Tr. at 38. Therefore, the Board declines to require monitoring of porewater elevation with CCR surface impoundments.

Groundwater Sampling and Analysis

Section 845.640 specifies the protocols for sampling and analysis of groundwater samples as well as requirements for establishing background groundwater quality in hydraulically upgradient or background wells for each of the monitored constituents. The rule also prescribes the statistical methods to be used in evaluating the groundwater monitoring data. No substantive changes were proposed to this section; however, the Board is accepting IEPA's proposed non-substantive changes to subsection (c). PC 120 at 70.

Section 845.640 contains groundwater sampling and analysis requirements that the owner or operator must satisfy. Subsection (h) requires the owner or operator to determine whether there has been a statistically significant increase over background values for specified constituents. That determination requires comparing the groundwater quality of each constituent at each monitoring well “designated under Section 845.630(a)(2) or (d)(1)” to that constituent’s background value.

In pre-filed questions to IEPA, the Board suggested revising Section 845.640(c). IEPA does not object to the revision as “it does not change the meaning of the subsection.” PC 120 at 76. The changes are as follows:

- c) ~~Groundwater elevations must be measured in each well prior to purging, each time groundwater is sampled. The owner or operator of the CCR surface impoundment must determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same CCR management area must be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction. The owner or operator must perform the following each time ground water is sampled:~~
- 1) Measure groundwater elevations in each well prior to purging;
 - 2) Determine the rate and direction of groundwater flow; and
 - 3) Measure groundwater elevations in wells which monitor the same CCR management area within a time period short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

In its line-numbered version of the rule (JCAR r01, filed June 22, 2020), JCAR proposes deleting “(2)” in the cross-reference to Section 845.630(a)(2), leaving “Section 845.630(a).” This change is “unacceptable” to IEPA because JCAR has “lumped upgradient and down gradient wells together.” PC 120 at 7.

Board Findings. Deleting “(2)” from Section 845.640(h)(1)’s cross-reference to “Section 845.630(a)(2),” as JCAR suggests, would mean it cross-references all of subsection (a), not just subsection (a)(2). Whether the deletion makes sense requires examining Section 845.630(a).

Under Section 845.630(a), the owner or operator must install a groundwater monitoring system of wells that yield groundwater samples meeting the requirements of subsection (a)’s two subsections—(a)(1) and (a)(2). Subsections (a)(1) and (a)(2) have opposite purposes. Subsection (a)(1) concerns monitoring for “the quality of background groundwater that has not been affected by leakage from a landfill containing CCR or CCR surface impoundment.” Subsection (a)(2), in contrast, concerns monitoring for “the quality of groundwater passing the

waste boundary of the CCR surface impoundment,” *i.e.*, to ensure “detection of groundwater contamination.”

The Board proposes these Section 845.640(c) changes at second notice to further clarify the groundwater sampling process.

As proposed at first notice, Section 845.640(h)(1) requires the owner or operator, in determining whether a statistically significant increase has occurred, to “compare the groundwater quality of each constituent at each monitoring well designated pursuant to Section 845.630(a)(2) . . . to the background value of that constituent.” Logically, it is the Section 845.630(a)(2) downgradient well—not the Section 845.630(a)(1) upgradient or background well—that must be used to compare to each background value. The Board therefore finds that Section 845.640(h)(1) correctly cross-references subsection (a)(2) of Section 845.630, not more generally subsection (a) of Section 845.630.

Groundwater Monitoring

Monitoring Constituents. Midwest Generation proposed revisions to Section 845.650(a) that would allow a facility to petition IEPA after 12 quarters of groundwater monitoring, to reduce the constituents that would be required to be analyzed. PC 125, App. A at 2. Midwest Generation notes that the rules as proposed would require the analysis of groundwater samples for all Section 845.600 constituents throughout the life of the CCR surface impoundment, including its post-closure care. PC 125 at 10. Midwest Generation argues, “[o]nce the chemical composition of the CCR is determined, if certain constituents listed in Section 845.600 are absent, there is no reason to continue analyzing the groundwater for those constituents throughout the operating life and post-closure monitoring of the CCR surface impoundment.” *Id.*

IEPA opposes Midwest Generation’s proposed revisions noting that “the simplest and most reliable way to determine what constituents may be leaking from a CCR surface impoundment is to analyze for the full suite of constituents.” PC 129 at 28. Also, IEPA contends that elimination of monitored constituents would be inconsistent with the requirements of the federal rules under 40 C.F.R. 257. *Id.*

Board Findings. The Board agrees with IEPA that the most reliable approach for detecting leakage of constituents from CCR surface impoundment is to analyze for all Section 845.600 constituents. While the Board has allowed reducing the number of monitored constituents under the Part 811 landfill rules, as suggested by Midwest Generation, the number of constituents for landfills is significantly larger, at over 100. Also, landfill rules still require periodic monitoring of the full suite of constituents. The Board finds that reducing the number of monitored constituents for CCR surface impoundments is not needed because the proposed rules require monitoring of only 22 constituents and the Board also allows for reduced monitoring frequency after 5 years. Therefore, the Board declines to make the changes suggested by Midwest Generation.

Developing Background Groundwater Quality Data. Midwest Generation recommends that Section 845.650(b)(1) be modified to allow existing CCR surface impoundments, which are currently not regulated under Part 257 but will be covered under Part 845, at least 18 months to develop background data rather than the proposed 180-day period. PC 125 at 6. Midwest Generation explains that 180-day period is too short to obtain independent samples as well as address temporal variability. *Id.* at 4-5. Midwest Generation notes that while the federal rules allowed existing CCR surface impoundments with compliant groundwater monitoring systems up to two years to develop background data, the same flexibility is not afforded to those impoundments that are not under Part 257. *Id.* at 4.

Further, Midwest Generation argues that IEPA misinterprets Part 257 as requiring background data to be developed within 180 days. Midwest Generation maintains that “Part 257 requires 180-days to conduct the background sampling for new CCR surface impoundments, not existing ones.” *Id.* at 5 citing 40 CFR 257.94(b), Ex. 8, p. 472. Midwest Generation asserts that for existing surface impoundments, Part 257 instead allows two years for the collection of eight independent samples. *Id.* citing 40 CFR 257.94(b); Exh. 50 at 19, Exh. 52 at 10. Midwest Generation proposes the following modification to Section 845.650(b)(1) to allow for additional monitoring time period for developing background data:

1) Monitoring Frequency

The monitoring frequency for all constituents with a groundwater protection standard in Section 845.600 and Calcium shall be at least quarterly during the active life of the CCR surface impoundment and the post-closure care period or period specified in Section 845.740(b) when closure is by removal.

- A) For existing CCR surface impoundments regulated under 40 CFR 257, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for all constituents with a groundwater protection standard listed in Section 845.600(a) and Calcium no later than 180 days after the effective date of this Part. The owner or operator may also rely upon data collected pursuant to Section 845.210(d).
- B) For existing CCR units not regulated under 40 CFR 257 but that are classified as regulated under 35 IAC 845, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for all constituents with a groundwater protection standard listed in Section 845.600(a) and Calcium no later than 18 months after the effective date of this Part.
- C) For new CCR surface impoundments, and all lateral expansions of CCR surface impoundments, a minimum of eight independent samples for each background well and downgradient well must be collected and analyzed for all constituents with a groundwater protection standard listed in Section 845.600(a) and Calcium during 180 days of sampling.

IEPA agrees that a longer time period will typically yield a better statistical estimation of true constituent concentrations, but so will an increased number of samples. PC 120 at 39-40. IEPA also notes that while Part 257 allows up to two years for existing CCR surface impoundments to complete eight rounds of background monitoring, those rules allow only 180 days for new CCR surface impoundments and lateral expansions of CCR surface impoundments. *Id.* at 39. Regarding the CCR surface impoundments that owners and operators have not reported under Part 257, IEPA maintains that it is appropriate for these facilities to begin groundwater monitoring promptly and to use existing groundwater monitoring data. IEPA clarifies that “[w]hile groundwater monitoring systems and groundwater monitoring programs developed under Part 257 or other monitoring programs are subject to Agency review and approval for inclusion under Part 845, all or parts of data sets can be used to enhance statistical power.” *Id.* at 41.

Board Findings. The Board agrees that a longer monitoring period would allow the consideration of seasonal and temporal changes in establishing background groundwater quality. Though the proposed provisions under Section 845.650(b)(1) specify a 180-day period for developing background data, consistent with Part 257, the rules allow for the consideration of additional existing data for developing background. Regarding the existing CCR surface impoundments that are not regulated under Part 257, the Board notes that these facilities have been on notice of the proposed rules since the facilities were invoiced in December 2019 and IEPA proposed Part 845 in March 2020. In light of this, the Board declines Midwest Generation’s proposal to extend the 180-day background monitoring time period to 18 months.

Groundwater Monitoring Frequency. Dynegy requests that the frequency of groundwater monitoring in Section 845.650(b) be reduced from quarterly to semiannual during post-closure care. PC 126 at 13. Arguing that in many cases, once a CCR surface impoundment is closed in place, constituent concentrations fall relatively quickly. *Id.* at 12-13. Dynegy questions the purpose of sampling for constituents for the entire length of the post-closure care period if it can be shown that the constituents are within the required range. *Id.*

Dynegy asserts that reducing monitoring frequency during the post-closure care period would result in lowered costs without affecting efficacy. PC 126 at 12-14. Dynegy recommends that the Board adopt a similar approach for Part 845 as it used in the Hutsonville site-specific rule under 35 Ill. Adm. Code 840.114. *Id.* at 13. Dynegy proposes the following changes to Section 845.650(b):

- 3) Five years after the completion of closure activities, the owner or operator of a CCR surface impoundment may request for approval a modification of the post-closure care plan to reduce the frequency of groundwater monitoring during the post-closure care period or period specified in Section 845.740(b) to semi-annual sampling by demonstrating all of the following:
 - A) That monitoring effectiveness will not be compromised by the reduced frequency of monitoring;

- B) That sufficient data has been collected to characterize groundwater; and
 - C) That concentrations of constituents monitored pursuant to Section 845.650(a) at the down-gradient monitoring well(s) show no statistically significant increasing trends that can be attributed to the CCR surface impoundment.
- 4) If, after revising the post-closure care plan pursuant to subsection (2) , a statistically significant increasing trend is detected, monitoring shall revert to a quarterly frequency. PC 126, Att. A at 36.

CWLP also argues for flexibility in allowing reduced monitoring frequency during the post-closure care period when groundwater protection standards have been met. PC 122 at 11. CWLP asks that the Board provide “an option to reduce sampling frequency from quarterly to semi-annually when there are no down-gradient concentrations of a constituent or constituents required to be monitored pursuant to Part 845 above background levels for at least four consecutive quarters.” *Id.* at 12. Midwest Generation also asserts that the final rule should allow for a decrease in frequency once the owner or operator demonstrates that the CCR leachate is not a threat to groundwater. PC 125 at 12. Based on the Board’s landfill regulations under Part 811, Midwest Generation proposes that the rule allow monitoring frequency to be reduced to semiannual after five years of quarterly monitoring upon obtaining QPE certification if certain conditions are met. PC 125, Appdx. A at 3.

IEPA is generally amenable to reducing the monitoring frequency, but it opposes the changes to Section 845.650 proposed by Dynegey and Midwest Generation. PC 129 at 27, 28 and 30. However, in response to a question from the Board, IEPA offers the following criteria that it asserts must be considered in allowing an alternative monitoring frequency:

1. The effectiveness of groundwater monitoring will not be compromised by the reduced frequency. Where a selected statistical method requires a larger data set or a large variability in season concentrations of constituents exists, a longer span of quarterly monitoring may be necessary than at other locations.
2. Sufficient data has been collected to characterize groundwater. The sufficiency of data to characterize groundwater would be site specific and would require some analysis by an owner or operator to demonstrate to the Agency that groundwater has been characterized.
3. The groundwater monitoring schedule currently in place must not show any statistically significant increasing trends. If increasing trends are present in the groundwater data, it does not make sense to decrease the frequency of monitoring, because it could delay initiation of corrective measures.

4. There should be a trigger in circumstances where a monitoring frequency has been reduced but an increasing trend develops:
 - To move back to the higher frequency to allow more frequent tracking of the trend, and
 - To initiate further analysis and investigation if the increasing trend persists.
5. Because Part 845 must be as protective and comprehensive as Part 257, and Part 845 requires monitoring of both the Part 257 Appendix III and Appendix IV constituents, a reduced frequency must not be less than semi-annually.
6. Any reduction in groundwater monitoring frequency must be subject to Agency approval. 9/24/20 IEPA Resp to Board Questions at 5-6.

Board Findings. The participants have raised a valid issue concerning the proposed frequency of groundwater monitoring. The Board agrees that the monitoring frequency may be reduced once sufficient data have been collected to establish the groundwater flow regime and monitoring shows no statistically significant increasing trends. In this regard, the Board finds that IEPA's suggested criteria are appropriate for considering a reduction in frequency.

The Board agrees with Midwest Generation's approach of requiring a minimum 5-year period of monitoring before considering a reduction in monitoring frequency. This approach mirrors the Board's landfill regulations. The Board finds that the 5-year monitoring period allows for collecting sufficient data to characterize groundwater. Therefore, the Board allows the reduction of monitoring frequency after the initial five years of monitoring from the effective date of these regulations. Finally, to ensure that monitoring frequency is not reduced at sites with groundwater contamination issues, the Board also adds a condition that permits the frequency to be reduced only if monitoring indicates that the concentrations of all monitored constituents are below the GWPS (Section 845.600) in the downgradient wells. See PC 125, Appen A at 3. The Board makes the following revisions to Section 845.650(b) to allow the reduced monitoring frequency.

b) Monitoring Frequency

- 1) The monitoring frequency for all constituents with a groundwater protection standard in Section 845.600, ~~and~~ Calcium and Turbidity shall be at least quarterly during the active life of the CCR surface impoundment and the post-closure care period or period specified in Section 845.740(b) when closure is by removal except as allowed in subsection (b)(4).
- 4) After completion of five years of monitoring under this Part, the owner or operator of a CCR surface impoundment may request the Agency for approval a semiannual monitoring frequency by demonstrating all of the following:

- A) The groundwater monitoring effectiveness will not be compromised by the reduced frequency of monitoring;
 - B) Sufficient data has been collected to characterize groundwater;
 - C) The groundwater monitoring schedule currently does not show any statistically significant increasing trends; and
 - D) The concentrations of constituents monitored pursuant to Section 845.650(a) at the down-gradient monitoring well(s) are below the applicable groundwater protection standards under Section 845.600;
- 5) If, after an Agency approval of a semiannual monitoring frequency under subsection (b)(4), a statistically significant increasing trend is detected, or an exceedance above the GWPS is detected, the monitoring must revert to a quarterly frequency.

Groundwater Elevation Monitoring. Instead of the monthly frequency proposed by IEPA, Midwest Generation asserts that the Board should modify Section 845.650(b)(2) to allow quarterly groundwater elevation monitoring. According to Midwest Generation, an owner or operator should be allowed to measure groundwater elevation at the same quarterly frequency required for groundwater sampling—following either 36 months of groundwater measurements or the potential effect, if any, of flooding events is documented. PC 125 at 12-13, Appen. A at 2. Dynegy also proposes this quarterly monitoring of groundwater elevation in all wells, along with daily monitoring in one upgradient well and one downgradient well. Dynegy notes that IEPA’s “only basis for proposing a monthly monitoring requirement was that some commenters had asked for daily monitoring, which IEPA believes would be too burdensome.” PC 126 at 17, citing 8/13/20 Tr. at 160. Dynegy explains that the proposed daily monitoring at two wells is based on the recommendation of the Environmental Groups’ witnesses, McGruder and Payne. *Id.* at 18-19, citing Exh. 19 at 40. Finally, Dynegy states, “daily elevation measurements should be required only so long as they are helpful for the purposes of site characterization, groundwater modeling, and assessing the performance of a closure/corrective action plan. Once a unit enters the post-closure care period, frequent groundwater elevation monitoring is no longer required, and it would therefore be an unnecessary burden on owners/operators.” *Id.* at 19. Therefore, Dynegy asks that that rules allow an owner or operator to request a modification to the post-closure care plan to eliminate daily groundwater elevation measurements during post-closure care, where certain conditions are met. *Id.*

CWLP also argues against monthly groundwater elevation monitoring. PC 122 at 6-8. “Quarterly monitoring has proven sufficient and is appropriate. There is no basis to continue to take monthly elevations from each groundwater well for the over 30 year length of closure and post-closure care when no corresponding chemical sampling is occurring.” *Id.* at 7 However, CWLP explains that it would not have an objection to a requirement for additional groundwater

elevation monitoring during the time period after adoption of Part 845 and before submittal of site characterizations and permit applications for closure with IEPA. *Id.* at 8.

IEPA opposes Dynegy's groundwater elevation monitoring revisions. PC 129 at 26. IEPA notes, "it is impossible to produce an accurate potentiometric map from just two daily groundwater elevation levels—every other groundwater elevation on the map would have to be extrapolated from those two elevations." PC 129 at 19-20. However, IEPA maintains that a potentiometric map produced by utilizing either monthly or quarterly groundwater elevation data "helps produce a visual demonstration of the direction and gradient of groundwater flow at a site for each sampling event during the various times of the year." *Id.* at 20.

Board Findings. The Board agrees that accurate potentiometric surface maps cannot be produced using only two daily groundwater elevation measurements. The Board notes that it is standard practice to measure groundwater elevation in all monitoring wells at the time sampling as proposed for CCR surface impoundments at Section 845.640(c), the frequency of which may be quarterly or semiannual. A good example is the Board's landfill regulations at 35 Ill. Adm. Code 318(e)(6), which requires the measurement of groundwater elevation in all wells at the time of sample collection and the frequency is set at quarterly or semi-annually. *See* 35 Ill. Adm. Code 318 and 319.

As noted by Midwest Generation, IEPA proposed the monthly frequency under Section 845.650(b)(2) in response to comments it received prior to filing its proposal with the Board. Exh. 2. At 129-130. Since the daily monitoring proposal is burdensome and does not result in an accurate potentiometric surface map, the Board finds that the monthly monitoring frequency is an appropriate compromise. Therefore, the Board at second notice adopts the monthly groundwater elevation monitoring requirement at Section 845.650(b)(2) without revision.

Monitoring Water Elevation in CCR Surface Impoundment. The Environmental Groups questioned whether the elevation of water in unlined impoundments is necessary to adequately evaluate groundwater flow direction. Env Grp Prefiled Question 21. In response, IEPA conceded that the elevation in an unlined CCR surface impoundment can, depending on site specific conditions, be necessary to determine groundwater flow. Therefore, IEPA suggests amending Section 845.650(b)(3) to require monitoring of impoundment water elevation each time groundwater elevations are monitored:

b) Monitoring Frequency

3) Measurement of water elevation within the CCR surface impoundment shall be conducted each time the groundwater elevations are measured pursuant to Section 845.650(b)(2) prior to dewatering for closure. PC 120 at 78.

Board Findings. The Board agrees with the Environmental Groups as well as IEPA that water elevation in the CCR impoundments must be monitored to allow the determination of groundwater flow. Thus, the Board accepts the proposed addition recommended by IEPA.

Initiation of Corrective Action Measures. Section 845.650(d)(3) requires the owner or operator to initiate an assessment of corrective measures or submit an ASD within 90 days of the detected exceedance of a groundwater protection standard. Midwest Generation argues that it is unreasonable to require corrective action and evaluation of ASD after detection of only one constituent in one quarter of sampling. PC 125 at 8. Midwest Generation questions IEPA's assertion that the proposed requirement is consistent with the federal rules under 40 C.F.R. 257. *Id.* Midwest Generation notes that the federal rule with its two-tier groundwater monitoring program allows for additional sampling and evaluation. *Id.* Midwest Generation asserts that "the Board should modify the rule so that at least two sampling events are allowed in order to increase the level of confidence that the results warrant the commencement of corrective action." *Id.* at 9. Midwest Generation proposes changes to Sections 845.650(d) as well as Section 845.660(a)(1) to require assessment of corrective action to begin within 90 days of the *two consecutive quarterly* detected exceedances of the GWPS. *Id.* Appen A at 3-4.

IEPA opposes Midwest Generation's changes noting that allowing two consecutive quarters would allow 6 months to a year before triggering either an ASD or an assessment of corrective measures depending on quarterly or semiannual monitoring frequency. PC 129 at 31. Such a long delay in beginning an assessment of corrective measures or an ASD, IEPA maintains, is unnecessary and urges the Board to reject Midwest Generation's proposed revisions to Section 845.650(d). *Id.*

Board Findings. The Board notes, as argued by IEPA, that Midwest Generation's proposed changes could result in delays up to six months in initiating assessment of corrective action measures or ASD. This delay may result in the Board rules being less protective than the Part 257 CCR regulations. Regarding Midwest Generation's concern that an exceedance of only one constituent in one quarter of sampling could trigger an assessment of corrective action measures or ASD, the Board notes that in addition to immediate resampling to confirm the exceedance, Section 845.650(d) requires additional sampling of monitoring wells during the proposed 90-day period submission deadline.

Sections 845.650(d)(1)(C) and (D) require the owner or operator to install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample the new well along with all other wells in accordance with Sections 845.650(a) and (b) to characterize the nature and extent of contamination. Thus, the owner or operator will have more than one sampling result to determine the nature and extent of contamination prior to submitting an assessment of corrective action measures or ASD. Further, the Board notes that by not extending the 90-day timeline, the proposed rule will be consistent with the requirements of Part 257. Therefore, the Board declines to make Midwest Generation's suggested changes to require two quarters of monitoring to initiate an assessment of corrective action measures or submit an ASD.

Plume Characterization and Surface Water/Sediment Pore Water Sampling. The Environmental Groups argue that Section 845.650(d) should include provisions that specify a sufficient number of wells are to be installed inside and outside leading edges of contaminant plume, as well as identify contaminant concentrations and internal concentration gradients for each contaminant. PC 124 at 32, citing Hutson PFT at 16. Additionally, the Environmental

Groups argue that the rules should explicitly require surface water and sediment porewater sampling in all locations where a contaminant plume may be discharged to surface water. *Id.* Midwest Generation asks the Board to reject the Environmental Group's suggestion by arguing that a study that relies on a single site is not a strong basis for a generally applicable rule. Ex. 15, Attachment 1.

IEPA explains that if an alternative source demonstration is not provided, Section 845.650(d)(1) requires "the owner or operator to characterize the nature and extent or the release and relevant site conditions that may ultimately impact the remedy selected." Dunaway PFT at 12-13. Further, IEPA notes that "[a]t a minimum the characterization must include additional monitoring wells required to define the contaminant plume, collect information regarding the nature and amount of the material released, including constituents listed in proposed 845.600, install at least one additional well at the done gradient facility property boundary, and notify anyone who owns or lives on land immediately above the plume of contamination." *Id.* at 13.

Board Findings. In light of the above, the Board finds Section 845.650(d), as proposed, sufficiently addresses the issues raised by the Environmental Groups. In addition to specifying broad performance standards for characterizing the nature and extent of the release in terms of the relevant site conditions, the rule also specifies minimum requirements for defining the contaminant plume. Further, the Board agrees with Midwest Generation that the Environmental Groups have not offered sufficient scientific support to justify the inclusion of surface water and sediment sampling. If there are any issues with surface waters and sediments at a site, such concerns must be addressed in relation to relevant site conditions on a site-specific basis under the proposed rules. Therefore, the Board declines to make the changes suggested by the Environmental Groups.

Alternative Source Demonstrations. Several participants requested that the Board modify the requirements of Section 845.650(d)(4) (changed to 845.650(e) at second notice at JCAR's request), which apply when an owner or operator attempts to make an alternate source demonstration or "ASD." With an ASD, the owner or operator seeks to show that "a source other than the CCR surface impoundment caused the contamination and the CCR surface impoundment did not contribute to the contamination, or that the exceedance of the groundwater protection standard resulted from error in sampling, analysis, statistical evaluation, natural variation in groundwater quality, or a change in the potentiometric surface and groundwater flow direction." Section 845.650(e). The owner or operator may submit an ASD within 60 days after a confirmed exceedance of a groundwater protection standard (GWPS); IEPA has 30 days to provide a written response either concurring or not concurring with the demonstration. As proposed by IEPA, the ASD provisions do not allow for direct public participation in IEPA's review process.

The Environmental Groups argue that the ASD should be subject to public participation to ensure public oversight over the ASD, as required by the Coal Ash Pollution Prevention Act. PC 124 at 91. On behalf of the Environmental Groups, Mark Hutson testified that because "ASDs potentially represent a significant change in our understanding of the site, and ASDs seem to be often offered in an attempt to avoid corrective action requirements, I recommend that Illinois treat an ASD as a permit change requiring notification of the public and approval by

IEPA.” Exh. 14, Hutson PFT at 17. The Environmental Groups contend that public input can help IEPA make better-informed decisions. They propose the following changes to Section 845.280(c):

- c) The owner or operator of a CCR surface impoundment may initiate modification to its permit by submitting an application to the Agency at any time after the permit is approved and before the permit expires. An alternative source demonstration will be considered a permit modification.

IEPA urges the Board to reject the Environmental Groups’ proposal to consider the ASD submission as a permit modification. IEPA argues that including an ASD in a Part 845 permit is not feasible because, under Section 845.650(d), the owner or operator has only 60 days after confirming a GWPS exceedance to submit an ASD to IEPA for review. PC 120 at 13. In turn, IEPA has 30 days after the ASD submission to concur or not concur with it. For example, if IEPA does not concur with the ASD, the owner or operator still has only 90 days after the GWPS exceedance confirmation to initiate an assessment of corrective measures. *Id.* IEPA contends that extending the time between the exceedance confirmation and the corrective measures assessment initiation to accommodate the public notice requirements of a permit modification is unacceptable because the Illinois requirement would not be as protective or comprehensive as 40 C.F.R. 257. *Id.*

Midwest Generation argues that if IEPA’s non-concurrence with an ASD is a final determination, the owner or operator should be allowed to appeal the determination to the Board. PC 125 at 13. “Because it would be fair to the owner or operator and not harm the public or the environment, the Board should insert a statement that an appeal of the Agency’s nonconcurrence stays the initiation of corrective measures in Sections 845.660, 845.670, and 845.680.” *Id.* at 14. Midwest Generation therefore proposes an automatic stay of corrective action whenever a facility disputes IEPA’s non-concurrence with the ASD. *Id.*

In response, IEPA asserts that no revisions are needed, but it does not “necessarily object to clarifying” that its non-concurrence with an ASD is a “final agency decision.” PC 129 at 32. IEPA “strongly objects” to Midwest Generation’s proposed “automatic stay of the initiation of assessment of corrective measure requirements.” *Id.*

Board Findings. The Board shares the Environmental Groups’ concern regarding the lack of public participation opportunities in the proposed ASD process. But, the Board agrees with IEPA that extending the 90-day timeframe for initiating the assessment of corrective action measures would be less protective and comprehensive than Part 257. Submitting the ASD as a permit modification, as suggested by the Environmental Groups, would significantly add to the proposed 90-day timeline. Additional time would be required for IEPA to comply with the permitting provisions, including notice and hearing requirements. Therefore, the Board declines to require that the ASD be submitted as a permit modification.

However, the Board recognizes that an ASD is significant and finds that the rules should allow for meaningful public participation in the ASD process, within the 90-day timeline. To that end, the Board requires that if an owner or operator submits an ASD to IEPA, the owner or

operator must place a copy of the ASD (along with the required supporting report and the qualified professional engineer's certification) on the facility's publicly accessible Internet site within 24 hours after the submission to IEPA. Further, within one business day after receiving the ASD, IEPA must issue a notice through the listserv that it received the ASD. For 14 days after IEPA's notice, interested persons may submit comments on the ASD for IEPA's consideration.⁸

The Board finds that these revisions to Section 845.650(d)(4) (now Section 845.650(e)) are consistent with the public participation directives of Section 22.59 of the Act:

- e) **Alternative Source Demonstration.** The owner or operator of a CCR surface impoundment may, within 60 days after the detected exceedance of the groundwater protection standard, submit a demonstration to the Agency that a source other than the CCR surface impoundment caused the contamination and the CCR surface impoundment did not contribute to the contamination, or that the exceedance of the groundwater protection standard resulted from error in sampling, analysis, statistical evaluation, natural variation in groundwater quality, or a change in the potentiometric surface and groundwater flow direction. Either type of alternative source ~~Any such~~ demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer. The supporting and the qualified professional engineer's certification must accompany the alternative source demonstration.
- 1) Within 24 hours after the owner or operator submits to the Agency the alternative source demonstration, the supporting report, and the qualified professional engineer's certification, the owner or operator must place those documents on its publicly accessible Internet site under Section 845.810.
 - 2) Within one business day after receiving the alternative source demonstration, the supporting report, and the qualified professional engineer's certification, the Agency must email notice—to its listserv for the facility—that it received those documents.
 - 3) For 14 days after providing notice under subsection (e)(2), the Agency must accept written comments from interested persons on the alternative source demonstration. The Agency must consider all timely submitted comments in formulating its written response under subsection (e)(4). An interested person who submits a written comment to the Agency must provide a copy of the written comment to the owner or operator.

⁸ If another source is responsible for the contamination, other remedial action may be required. Also, if a member of the public disagrees with IEPA's determination, there is still the possibility of enforcement actions for any alleged violations of the Act.

- 4A) Within 30 days after receiving the alternative source demonstration, the supporting report, and the qualified professional engineer’s certification, the The Agency must provide a written response to the owner or operator, either concurring or not concurring with the alternative source demonstration within 30 days. The Agency also must email its response—concurring or not concurring with the alternative source demonstration—to all persons who timely submitted public comments under subsection (e)(3).
- 5B) If the Agency concurs with the alternative source demonstration, the owner or operator must continue monitoring as required by in accordance with this Section and. ~~The owner or operator must also include the alternative source demonstration, the supporting report, and the qualified professional engineer’s certification~~ in the annual groundwater monitoring and corrective action report required by Section 845.610(e); ~~in addition to the certification by a qualified professional engineer.~~
- 6C) If the Agency does not concur with the alternative source ~~written demonstration made under this subsection (e)~~, the owner or operator of ~~the CCR surface impoundment~~ must initiate an ~~the~~ assessment of corrective measures ~~requirements~~ under Section 845.660.

Lastly, IEPA’s non-concurrence with an ASD may be viewed as a final determination appealable to the Board. However, to be consistent with the Part 257 requirement that the assessment of corrective action measures be initiated within the 90 days after the GWPS exceedance confirmation, the Board declines to add appeal language here. The Board is persuaded by IEPA’s argument that exceeding the 90-day timeline would make Part 845 less protective than Part 257. Adhering to the 90-day timeline prevents potential further damage to human health and the environment. The Board rejects Midwest Generation’s proposal to automatically stay the corrective action measures initiation whenever an owner or operator appeals an IEPA non-concurrence. Any Board decision on stay during a potential appeal should be made based on site-specific information accompanying the owner’s or operator’s petition for review of IEPA’s non-concurrence.

Cross-Reference Between Sections on Corrective Action Plan and Groundwater Monitoring Program. In specifying the corrective action plan’s schedule for completing remedial activities within a reasonable time period, the owner or operator must consider the factors in Section 845.670(f). The first factor, listed in subsection (f)(1), is the “[e]xtent and nature of contamination, as determined by the characterization required under Section 845.650(d).” The only question is whether Section 845.670(f)(1)’s cross-reference to Section 845.650 should be limited to its subsection (d).

IEPA’s proposal limited the cross-reference to Section 845.650(d), which addressed what the owner or operator must do upon confirming an exceedance of a groundwater protection standard. These required steps under Section 845.650(d) included those “following” in subsections (d)(1) through (d)(4). However, subsection (d)(4) listed not a requirement but rather

an exception under which the owner or operator may demonstrate an alternative source of the exceedance rather than starting to assess corrective measures. JCAR therefore suggests designating subsection (d)(4) as subsection (e). *See* JCAR Delta at 71 (June 22, 2020). And, as IEPA’s Section 845.670(f)(1) cross-referenced Section 845.650(d), JCAR proposes adding subsection (e) to the cross-reference, *i.e.*, “characterization required under Section 845.650(d) and (e).” *Id.* at 75. IEPA takes no issue with JCAR’s suggestion to designate Section 845.650(d)(4) as Section 845.650(e) but disagrees with adding subsection (e) to Section 845.670(f)(1)’s cross-reference. PC 120 at 7.

Board Findings. JCAR correctly recognizes that the alternative source demonstration is not a mandatory step upon confirming a groundwater exceedance but rather an exception for which the owner or operator might qualify. As such, the alternative source demonstration provision should not be listed among Section 845.650(d)’s requirements but instead designated, as JCAR suggests, as Section 845.650(e). At second notice, old subsection (d)(4) of Section 845.650 becomes new subsection (e).

This JCAR suggestion indirectly reveals that IEPA’s original cross-reference—at Section 845.670(f)(1)—to all of Section 845.650(d) was too broad. The subsection (d)(4) exception for an alternative source demonstration was never part of the “characterization required” by Section 845.650(d). Section 845.670(f) concerns the corrective action plan’s schedule of remedial activities. If an alternative source of the exceedance is demonstrated, the owner or operator of the CCR surface impoundment need not prepare a corrective action plan.

IEPA sees this now and recommends that Section 845.670(f)(1) not cross-reference the alternative source demonstration provision—*i.e.*, newly designated subsection (e) of Section 845.650. PC 120 at 7. The Board agrees with IEPA that “[s]ince (f)(1) is specific to corrective action plans, and an approved [alternative source demonstration] would not lead to a corrective action plan, it is not necessary or appropriate to include new subsection (e) as a reference in (f)(1).” *Id.* With old subsection (d)(4) now correctly designated as subsection (e) of Section 845.650, the Board finds that the cross-reference in Section 845.670(f)(1) is properly limited to Section 845.650(d). The Board therefore declines at second notice to add JCAR’s “and (e)” to Section 845.670(f)(1).

Assessment of Corrective Action Measures

Section 845.660 specifies the provisions for the analysis of the effectiveness of potential corrective measures under Section 845.670. The participants raised issues concerning the initiation of the assessment and clarification of terminology. Midwest Generation asked that Section 845.670(a) be revised to reflect its proposal to require initiation of corrective action measures based on two consecutive quarters of monitoring showing exceedances above the GWPS. The Board has made these changes to Section 845.860(a)(1) to incorporate Midwest Generation’s revision. *See* discussion under Initiation of corrective action measures.

In response to concerns raised by Dynegy at hearing regarding the use of the term “release,” IEPA “agrees that because the definition of release includes the release of both liquid and solids, a distinction between the two materials should be included in Section 845.660(a)(1)

for clarity.” PC 120 at 78-79 citing 8/13/20 Tr. at 68. Based on a review of other sections of the proposed rules where the term “release” is used, IEPA explains “that Section 845.660(a)(1) is one of the only subsections where the application of “release” is not clear from the context of the subsection.” *Id.* at 79. Therefore, IEPA proposes the following revisions to clarify how “release” is intended to apply:

- a) Unless the Agency has concurred with an alternative source demonstration made pursuant to Section 845.650(d)(4), the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore the affected area.
 - 1) The assessment of corrective measures must be initiated within 90 days of finding that any constituent listed in Section 845.600 has been detected at the downgradient waste boundary in exceedance of the groundwater protection standards in Section 845.600, or immediately upon detection of a release of CCR from a CCR surface impoundment.

Board Findings. The Board agrees with IEPA that Section 845.660(a)(1) must be revised to clarify the intent of the term “release”. Therefore, the Board accepts IEPA’s suggested revisions note above.

Combined Assessment of Alternatives

Section 845.660 concerns the owner’s or operator’s “corrective measures assessment.” Section 845.710 concerns the owner’s or operator’s “closure alternatives analysis.” Section 845.660(e) recognizes that the owner or operator may complete both closure and corrective action “simultaneously.” In that circumstance, the first-notice version of Section 845.660(e) allows the owner or operator to “combine the requirements” of Sections 845.660 and 845.710 “into one assessment of alternatives.”

This rule language is ambiguous for two reasons. First, although an owner or operator is capable of complying with, violating, or potentially obtaining relief from “requirements” it is subject to, the owner or operator is not capable of “combining requirements.” Second, these “requirements,” which are being codified in Board regulations, cannot themselves be combined into an “assessment.” JCAR suggests adding the words “for correction”—*i.e.*, Section 845.660’s requirements “for correction”—(JCAR Delta at 73 (June 22, 2020)), which IEPA would change to “for corrective action” (PC 120 at 7), but neither amendment would remedy the ambiguity or square with the fact that Section 845.660 concerns the corrective measures “assessment.”

The hearing record, however, suggests a solution. When the Environmental Groups asked what IEPA meant by “combined,” IEPA explained that “[t]he documents and associated assessments required for closure and for corrective action can be submitted in a single construction permit application.” 8/3/20 IEPA PFR at 40. IEPA cautioned that even when seeking a permit for both closure and corrective action, the owner or operator must comply with all the respective requirements of Sections 845.660 and 845.710. *Id.* at 40-41.

Board Findings. The Board agrees with IEPA. The aim of Section 845.660(e) is simple: not to relieve the owner or operator of any requirements, but to allow the owner or operator the common-sense efficiency of combining its *corrective measures assessment* with its *closure alternatives analysis* into *one assessment* of alternatives—when the owner or operator is simultaneously completing closure and corrective action. The Board clarifies that aim as follows:

When the owner or operator of a CCR surface impoundment is completing closure and corrective action simultaneously, the owner or operator may combine the corrective measures assessment required by this Section ~~requirements for correction~~ and the closure alternatives analysis required by ~~requirements of~~ Section 845.710 into one assessment of alternatives.

Corrective Action Alternatives Analysis

In selecting a compliant remedy, the owner or operator must evaluate *each potential remedy* against the factors in Section 845.670(e). IEPA’s proposal refers to “the potential remedy(s)” and “a potential remedy(s),” tracking the language of USEPA’s rule (40 C.F.R. § 257.97(c)). JCAR suggests deleting the three occurrences of “(s)” at the end of “remedy” in Section 845.670(e). *See* JCAR Delta at 74-75 (June 22, 2020). In turn, IEPA proposes adding the word “each” before “potential remedy” to clarify that “evaluation of more than one potential remedy is anticipated.” PC 120 at 7.

Board Findings. The Board agrees with both JCAR and IEPA. In rule drafting, the Board shuns using a parenthetical “s” at the end of a noun as a way of conveying both plural and singular. The parenthetical “s” is not plain English. Confusion is compounded here because the word “remedy” is not made plural merely by adding an “s” to the end of it. And other words within these sentences, grammatically correct for the singular form “remedy,” are not for the plural form, such as the indefinite article “a”, *i.e.*, “a remedies.” Retaining the shorthand “(s)” would therefore require still more awkward constructions like “addressed by a (the) potential remedy(s).” At second notice, the Board amends subsections (e)(1), (e)(2), (e)(3), and (e)(4) to refer to “each potential remedy.”

Subpart G: Closure and Post-Closure Care

Subpart G specifies the requirements for closure and post-closure care of CCR surface impoundments. These requirements address the priorities for closure, closure alternative analysis, closure plans for both closure by removal and in-place closure with final cover, retrofitting, and post-closure care activities.

Required Closure or Retrofit of CCR Surface Impoundments

Section 845.700 specifies the conditions for required closure of CCR surface impoundments. These conditions include noncompliance with the location criteria, failure to complete the initial or subsequent annual safety factor assessment, or failing to retrofit an existing unlined CCR surface impoundment under Subpart D. Additionally, the rules specify

criteria for prioritizing closure of CCR surface impoundments based on risk to health, environment, and proximity to environmental justice communities. Next, timelines are included for owners or operators to submit closure applications based on that risk. Those CCR surface impoundments that pose the greatest risk and are located in environmental justice communities would be required to submit a closure application 9-months after the rule becomes effective. Those impoundments which pose a slightly lower risk would be required to submit a closure plan 6-months later, and those posing the least risk 18 months later.

The participants raised several issues about Section 845.700. In addition, IEPA proposed rule revisions to address an apparent omission on retrofitting and to align the rule with Part 257. The Board discusses these issues and makes its findings below.

USEPA Public Comment. In a public comment, USEPA notes two items of possible concern related to the Board's proposed Section 845 rulemaking. The first item concerns Part A - Deadline to Initiate Closure and Enhancing Public Access to Information. PC 117. This USEPA rule change alters the date by which unlined surface impoundments and impoundments that failed the aquifer location restriction must cease receiving waste and initiate closure or retrofit (85 Fed. Reg. 53516 (Aug. 28, 2020)). The second item USEPA's public comment cites concerns Part B - Alternate Demonstration for Unlined Surface Impoundments. PC 117. This rule change allows facilities that meet certain conditions to demonstrate to USEPA or the Director of a Participating State, based on groundwater data and the design of a particular surface impoundment, that a CCR surface impoundment has ensured and will continue to ensure there is no reasonable probability of adverse effects to human health and the environment. (85 Fed. Reg. 72506 (Nov. 12, 2020)).

Regarding Part A, IEPA notes that its March 30, 2020, proposal to the Board included provisions paralleling the USEPA's proposed Part A rules under Section 845.700. *See* PC 120 at 79-83 and PC 129 at 36-38. However, IEPA suggested changes to Sections 845.700(b) and (d)(2) as well as Section 845.770(a) to ensure that the provisions of Part 845 related to extensions of time to cease receipt of waste and complete closure are still consistent with the USEPA's finalized time extension requirements published on August 28, 2020. *See* PC 129 at 36-38.

Next, IEPA notes that USEPA's Part B rule allows clay lined CCR surface impoundments, which are otherwise considered unlined, to continue to receive waste for a specified time period. PC 129 at 37. However, IEPA asserts that because Part 845 does not incorporate any of the provisions of USEPA's Part B rule, "clay lined CCR surface impoundments will continue to be considered unlined and will be required to close on the same schedule as other unlined CCR surface impoundments." *Id.* at 37-38. In sum, IEPA contends that Section 845, as proposed, "is as protective and comprehensive as both the Part A and Part B amendments to Part 257." *Id.* at 38.

Board Findings. The Board concurs with IEPA's review of the USEPA comment and accepts IEPA's revisions Sections 845.700(b) and (d)(2). These revisions ensure that the proposed closure requirements are consistent with the USEPA's recent changes to Part 257. The Board revises subsections (b) and (d)(2) as follows:

- b) Required Closure or Retrofit. The owner or operator of an existing unlined CCR surface impoundment, as determined under Section 845.400(f), must cease placing CCR and non-CCR waste streams into such CCR surface impoundment and either retrofit or close the CCR surface impoundment in accordance with the requirements of Subpart G. The owner or operator of a CCR surface impoundment electing to retrofit must submit the written preliminary retrofit plan pursuant to subsection 845.770(a)(3) and a construction permit application to retrofit pursuant to Section 845.770 according to the schedule in subsection (h);
- d) Timeframes for Closure
- 1) Except as provided in subsection (d)(2), the owner or operator must stop ~~cease~~ placing CCR and non-CCR waste streams in the impoundment and initiate closure within six months after failing to complete any of the demonstrations listed in subsection (a).
 - 2) For CCR surface impoundments required to close under subsection (a)(1) or electing to close under subsection (b):
 - A) If, on the effective date of this Part, the owner or operator of a CCR surface impoundment has not satisfied an alternative closure requirement of 40 CFR 257.103 that allows for the continued receipt of CCR or non-CCR waste streams, the owner or operator must not place CCR or non-CCR waste streams into the CCR surface impoundment after the effective date of this Part.
 - B) If by ~~on or before~~ November 30, 2020, the owner or operator of a CCR surface impoundment has submitted a complete demonstration to USEPA seeking an alternative deadline to stop receiving ~~cease receipt of~~ waste or complete closure under pursuant to 40 CFR 257.103(f), the deadline to stop receiving ~~cease receipt of~~ waste must ~~shall~~ be tolled until USEPA issues a decision. If USEPA determines that a submission is incomplete, an owner or operator must immediately stop receiving ~~cease receipt of~~ waste and comply with all applicable deadlines of Section 845.700(d)(1).
 - C) If USEPA disapproves the requested alternative deadline to stop receiving ~~cease receipt of~~ waste and complete closure, the owner or operator of the CCR surface impoundment must ~~shall~~ immediately stop receiving ~~cease the receipt of~~ waste and initiate closure within six months of the USEPA denial of the extension and will ~~shall~~ be subject to Section 845.760(a).

- DB) If, ~~on the effective date of this Part, the owner or operator of a CCR surface impoundment has demonstrated~~ USEPA approves a demonstration that alternative disposal capacity is infeasible under 40 CFR 257.103(f)(1), the owner or operator must stop ~~ease~~ placing CCR or non-CCR waste streams into the CCR surface impoundment by the end of the initial time extension approved under 40 CFR 257.103 or once alternative capacity becomes available, whichever is sooner. In no case may the owner or operator of the CCR surface impoundment place CCR or non-CCR waste streams into an eligible the CCR surface impoundment after October 15, 2024, or into any other CCR surface impoundment subject to closure under Section 845.700(a) or (b), after October 15, 2023.
- EC) If, ~~on the effective date of this Part, the owner or operator of a CCR surface impoundment has demonstrated~~ USEPA approves a demonstration for permanent cessation of coal-fired power boilers by a certain date under 40 CFR 257.103(f)(2), the owner or operator must:
- i) For CCR surface impoundments that are 40 acres or smaller, stops ~~ease~~ operation of the coal-fired boiler and complete closure by no later than ~~by no later than~~ October 17, 2023; or
 - ii) For CCR surface impoundments that are larger than 40 acres, stops ~~ease~~ operation of the coal-fired boiler and complete closure by no later than ~~by no later than~~ October 17, 2028.
- F) The USEPA's decision to approve or deny the demonstration requesting an alternative deadline to initiate closure must ~~shall~~ within 30 days, be submitted to the Agency and placed in the owner's or operator's operating record as required by Section 845.800(d)(19).
- GD) Failure to remain in compliance with any of the requirements of this Part will result in the automatic loss of authorization under subsections (d)(2)(~~DB~~) and (d)(2)(EC).
- HE) The owner or operator of the CCR surface impoundment with a USEPA-approved extension will not be given extensions of the timeframes for completion of closure under Section 845.760(c).

Environmental Justice. The Environmental Groups argue that with the legislatures' focus on environmental justice communities, and the emphasis placed on public participation, the rules should allow for meaningful public participation when considering closure priorities designations. PC 124 at 90. The Environmental Groups ask the Board to require the inclusion of

the proposed closure designations under Section 845.700(g) in applications for operating permits under Section 845.230(d). *Id.* Many commenters stressed that it was imperative the regulations consider environmental justice communities. See Tr. 3 PC at 31: 16-20. Specifically, many suggested using the USEPA Environmental Justice Screen to evaluate nearby communities that fit the definition of environmental justice communities. Comments also requested that the regulations make it a priority to close and remediate sites nearest to environmental justice communities such as East Alton, Waukegan, and others. Tr. 2 PC at 92; Tr. 3 PC at 34-35.

CWLP contends that the proposed rule language fails to properly define important terms in Section 845.700(g)(6) and (g)(7) regarding environmental justice. PC 122 at 15. Specifically, CWLP argues IEPA did not define “area of environmental justice concerns” or “census block group.” *Id.* CWLP proposed that the pre-filed testimony of IEPA Environmental Justice Officer, Chris Presnall, did shed light on IEPA’s understanding of the terms, but that the rule language alone is not indicative of those terms. *Id.* at 15-16, *citing* Presnall Pre-Filed Test. at 2-3, *see also* 8/25/20 Tr. at 20-26.

Board Findings. The Board finds that including the Section 845.700(g) closure priority list designations in the permit application under Section 845.230 allows for meaningful public participation, as required by Section 22.59 of the Act. The Board at second notice adds the Environmental Groups’ proposed revisions to Section 845.230(d)(2) with a clarifying change as follows to new Section 845.230(d)(2)(T):

T) For CCR surface impoundments required to close under Section 845.700, the proposed closure priority categorization required by Section 845.700(g).

Regarding CWLP’s concerns with terminology, IEPA’s witness, Chris Pressnall, notes that IEPA’s Environmental Justice Public Participation Policy defines “area of EJ concern” as a census block group or areas within one mile of a census block group with income below poverty and/or minority population greater than twice the statewide average. Pressnall PFT at 2. Further, he explains that IEPA has developed a publicly available “Geographic Information System (GIS) mapping tool call EJ Start to identify census block groups and areas within one mile of census block groups meeting the EJ demographic screening criteria.” *Id.* The Board finds that the record should be further developed as to whether it should include additional screening tools to consider pollution burden on communities, such as the one used by USEPA. The Board asks participants to provide additional information and develop rule language proposals in the sub-docket being opened. At this point, the Board declines to make any revisions concerning the EJ terminology in Section 845.700(g)(6).

Category 2 CCR Surface Impoundments. Dynegy contends, relying on Dr. Lisa Bradley’s testimony, that “there is not automatically an imminent threat to human health or the environment where a unit fails to meet a location restriction or where an exceedance of the groundwater protection standard has been detected off-site.” PC 126 at 43 citing Bradley PFT 29-30, Exh. 25 at 9. Therefore, Dynegy argues that under subsection (g), IEPA first needs to make a finding that there is an imminent threat to human health or the environment before designating a CCR Surface Impoundment as a Category 2 impoundment. Dynegy proposes

revisions to Sections 845.700(g)(1) and (g)(5) to address its concern regarding Category 2 designation.

IEPA objects to Dynegy's proposed revisions to Sections 845.700(g)(1) and (g)(5) because they establish a higher standard for categorizing a CCR surface impoundment as Category 2. PC 129 at 34. IEPA argues that Dynegy's revisions create a two-step process, a separate determination of imminent threat to human health and the environment, as well as an IEPA designation under subsection (g)(5). In contrast, under the proposed rule, IEPA's designation of a CCR surface impoundment as Category 2 under the subsection (g)(5) factors is a finding of imminent threat warranting the designation. *Id.* IEPA says that it "would not oppose replacing 'and' with 'or' in Dynegy's revision to (g)(1)(B)" to clarify that a subsection (g)(5) designation "would not necessarily subject an owner or operator to potential liability based on the 'imminent threat' language of that provision." *Id.* However, IEPA urges the Board to "reject Dynegy's proposed revision to Section 845.700(g)(5) in its entirety." *Id.*

Board Findings. The Board finds that IEPA's designation based on subsection (g)(5) factors represents a finding of imminent threat to human health and the environment. The Board notes that in addition to designating CCR surface impoundments as Category 2 based on non-compliance with safety factors, location restrictions, and GWPS, subsection (g)(5)(E) allows IEPA to designate an impoundment as Category 2 whenever an emergency condition exists creating an immediate danger to public health or welfare, or the environment. Therefore, the Board finds that the two-step process for Category 2 designation proposed by Dynegy is unnecessary. However, the Board finds that IEPA's proposed change to Dynegy's revision to subsection (g)(1)(B) by replacing "and" with an "or" provides clarity by not combining a Category 2 designation based on imminent threat with the same designation based on other factors under subsection (g)(5). The Board revises Section 845.700(g)(1)(B) as follows:

- B) Category 2 includes CCR surface impoundments that are an imminent threat to human health or the environment ~~as determined and~~ or have been designated by the Agency pursuant to subsection (g)(5).

Application Schedules. Dynegy expresses concerns regarding the proposed schedules to submit construction permit applications under Section 845.700(h). Dynegy argues that subsection (h) does not allow for submission of a robust and complete application. PC 126 at 45. Based on Ms. Vodopivec's pre-filed testimony, Dynegy proposes extending the deadlines for Categories 4 and 5 by three months. PC 126 at 45-46 citing Vodopivec 8/27/20 PFT at 13-14. Midwest Generation expresses similar concerns regarding the Section 845.700(h)(1) deadlines to submit construction permit applications. PC 125 at 25.

IEPA did not specifically respond to Dynegy's and Midwest Generation's proposed schedule changes under subsection (h). However, in response to a change proposed by Midwest Generation to Section 845.230(d), IEPA explains:

[f]urther and most importantly, for CCR surface impoundments required to close under Section 845.700(a) or electing to close under 845.700(b), the proposed date of March 31, 2023 for submission of an initial operating [permit application?] is entirely incompatible

with Categories 1-5 of Section 845.700(g) and the associated deadlines for construction permits in Section 845.700(h). The Agency purposely proposed the dates for operating and construction permits so that an impoundment's initial operating permit is obtained prior to, or at least simultaneously with, any construction permit for closure. PC 129 at 9-10.

Board Findings. The Board recognizes that additional time would be helpful to the applicants. The Board notes that owners or operators of CCR Surface Impoundments have been on notice of impending rules since December 2019 when they were invoiced by IEPA as being subject to Section 22.59(j) of the Act. *Id.* at 10. As noted by IEPA, the owners and operators should be already in the process of completing some of the tasks required for submission of the construction permit. The Board declines to revise the schedules for submission of the construction permit application under subsection (h).

Other Changes. In response to Midwest Generation's pre-filed question regarding Section 845.700(h)(5), IEPA agreed that adding "and upheld" would be beneficial in clarifying when an owner or operator is required to submit a revised construction permit application. PC 49 at 12 of Att. 2.

Board Findings. The Board accepts this clarifying change.

The Environmental Groups' expert, Mark Hutson, suggested that Section 845.700 should require closure of any unit that has waste placed within five feet (1.52 meters) above the uppermost zone of saturation. Hutson Pre-Filed Test. at 9. The Board notes that it rejected Mr. Hutson's suggestion to replace "uppermost aquifer" with "uppermost zone of saturation" above under Subpart C.

Board Findings. Therefore, the Board declines to make Hutson's suggested change in this section.

Closure Alternatives

Section 845.710 requires the owners or operators to evaluate closure alternatives by considering the long and short term effectiveness and protectiveness of the closure, the effectiveness in controlling future releases, the ease or difficulty of implementing the potential closure method, and the concerns of the residents living within the communities where the CCR will be handled, transported, and disposed. The proposed section also requires the owners or operators to consider closure by complete removal as one alternative.

The closure alternative analysis must be included in the closure plan submitted to IEPA. The owners or operators are required to hold a public meeting concerning the closure alternatives at least 30 days before submitting its construction permit for closure. Finally, the owners or operators must select a closure method that meets the requirements of Part 845, ensures the protection of human health and the environment, and achieves compliance with the groundwater protection standards in Section 845.600. Many members of public expressed serious concern regarding the proposed rules' failure to mandate closure by removal instead of an analysis of

alternatives. Additionally, participants requested that the Board make several changes to address concerns regarding transportation of CCR, worker safety, and cost of closure. These issues are discussed below.

Closure by Removal or Closure in Place. Many members of the public, especially those who live or spend time along the Middle Fork of the Vermillion River, commented on the wildlife and ecological diversity in the area. PC 16, 17, 21, 23, 25, 26, 27, 30, 65, 81, 87, 127. Most went on to suggest that the Board include closure by removal and strict remediation standards in order to protect the wildlife and environment in the area. They expressed concerns over allowing “polluters” to cap and close in place. PC 23. Some stated that close-in-place procedures would be acceptable if the coal ash was guaranteed to stay dry, many more maintained that it should never be an option. *See, e.g.*, PC 25 at 1-2, 28. Instead, commenters suggested requiring that the material be moved to impermeably lined sites above the water table and floodplains. PC 29 at 3, PC 34. Mr. Hutson, on behalf of the Environmental Groups, testified that in his opinion closure in place of unlined CCR surface impoundments should only be allowed in instances in which the owner or operator can show that there will be no intermittent, recurring, or sustained hydraulic connections between CCR and groundwater following closure. Hutson Pre-Filed Test. at 9.

CWLP argues closure by removal should not be presumed to be the environmentally preferred method of closure. PC 122 at 12-13. CWLP contends that science and the record of the proceeding demonstrate that a variety of site-specific factors may help determine which method of closure is best for the environment. *Id.* at 13. CWLP then cites to several public comments within the docket of local officials concerned about increased truck traffic and safety risks, higher carbon emissions, unavoidable fugitive dust and wear and tear on local roads. *Id.* citing PC 10, 11, 12, 32, 33, 53. These comments ask the Board to consider giving industry flexibility when choosing what method of closure is best. PC 31, 32, 33. Next, CWLP argues that in almost every instance closure by removal takes longer than any other closure method. PC 122 at 13. They contend that the longer timelines leave the CCR material exposed to the elements, including stormwater, for longer periods of time, potentially increasing the amount of contaminants leaching into groundwater. *Id.*

Board Findings. The Board recognizes the concerns expressed by the members of the public but finds that the proposed closure alternatives analysis provisions are protective of human health and the environment. Under Section 845.710, the closure method must be chosen based on a closure alternatives analysis, which requires owners or operators to evaluate several closure alternatives, including closure by removal. Further, the closure method must be chosen by considering the long and short term effectiveness and protectiveness of the closure, the effectiveness in controlling future releases, the ease or difficulty of implementing the potential closure method, and the concerns of the residents living within the communities where the CCR will be handled, transported, and disposed. Additionally, this section requires that the chosen alternative meets the requirements and standards of Part 845, ensure the protection of human health and the environment, and achieve compliance with the groundwater protection standards in Section 845.600. Therefore, the Board finds the proposed approach to determine the appropriate closure method based on an evaluation of several alternatives to meet the

comprehensive performance standards to be protective of human health and the environment. The Board declines to mandate closure by removal as the only closure option.

Regarding CWLP's concerns, the Board notes that while the rules require the evaluation of closure by removal as one of the alternatives, there is no presumption that it is the preferred closure method. The rules allow the owner or operator, based on the closure alternatives analysis, to select the closure method that best meets the performance standards of Section 845.710.

Transportation Analysis. The Environmental Groups argue that the closure alternatives analysis should also consider transportation alternatives when transporting coal ash during closure by removal. PC 124 at 69-72. They argue that considering the environmental and health effects of transporting by rail, barge, and low-polluting trucks is the only way to protect communities near ash sites and along transportation routes. *Id.* at 69-70. Although not proposing any specific language changes to Section 845.710, the Environmental Groups ask that the Board require the closure alternatives analysis to include consideration of "transport of removed ash by rail, barge, and low-polluting (including, where feasible, electric) trucks, or a combination thereof." *Id.* 70.

In response, IEPA points out that the rules, as proposed, allow for the consideration of transportation alternatives to diesel trucks. "As proposed, Part 845 does not preclude exploration of transportation types, nor does it recommend or limit consideration to trucks for removal of CCR. Rather, Part 845 acknowledges the availability of such transportation methods by requiring manifests when transporting CCR off-site by any other mode or method, including but not limited to trains or barges." PC 120 at 9.

Board Findings. Section 845.710(b)(1)(F) requires evaluating the long and short term effectiveness and protectiveness of the closure method, including identifying and analyzing the potential for exposing humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with *excavation, transportation, redisposal, containment*, or changes in groundwater flow. Further, Section 845.710(b)(4) requires the closure analysis to examine the degree to which the concerns of the residents living within communities—where the CCR will be handled, transported, and disposed of—are addressed by the closure method. Additionally, as one closure alternative in the closure alternatives analysis, Section 845.710(c) requires the owner or operator of the CCR surface impoundment to analyze complete removal of the CCR. Thus, although the rules address transporting CCR and closure by complete removal, they do not explicitly require analyzing transportation alternatives associated with closure by complete removal.

The Board agrees that transporting CCR for offsite disposal may significantly impact communities near the facility, as well as along the transportation route and at the final disposal site. The Board finds that requiring an evaluation of transportation alternatives—as a part of the "closure by complete removal" alternative analysis—would reduce any potential negative impacts on communities and the environment. However, the record does not support mandating the use of specific transportation methods, like low-emission trucks, barges, or rail. Deciding on the most appropriate mode of transportation must be based on analyzing transportation

alternatives with site-specific information. The Board will amend Section 845.710(c) as follows to specifically require an analysis of transportation alternatives as a part of the closure alternative by complete removal of CCR alternative:

At second notice, the Board amends Section 845.710(c) to specifically require analyzing transportation alternatives as part of the “closure alternative by complete removal” of CCR as follows:

- c) In the closure alternatives analysis, the ~~The~~ owner or operator of the CCR surface impoundment must:
 - 1) Analyze ~~analyze~~ complete removal of the CCR as one closure alternative, along with the modes for transporting the removed CCR, including by rail, barge, low-polluting trucks, or a combination of these transportation modes in the closure alternatives analysis;
 - 2) Identify ~~The closure alternative analysis must identify~~ whether the facility has an onsite landfill with remaining capacity that, ~~which~~ can legally accept CCR, and, if not, whether constructing an onsite landfill is possible; and;
 - 3) Include ~~The owner and operator of the CCR surface impoundment must include~~ any other closure method in the alternatives analysis if requested by the Agency.

Worker Safety. Dynege asks the Board to include consideration of worker safety explicitly in the closure alternative analysis. PC 126 at 10-11. Dynege argues that this change would be consistent with other state and federal programs, such as RCRA, the Board’s MSW landfill regulations, and CERCLA. *Id.* Dynege proposes the following change to Section 845.710(b)(1)(D):

- D) the short-term risks that might be posed to workers, the community or the environment during implementation of such a closure, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of contaminants;[.] *Id.*

The Environmental Groups state that worker safety must be enhanced but not as proposed by Dynege. PC 135 at 28. They argue that worker safety must be expanded by mandating clear, robust dust protections and monitoring, as described in their post-hearing comments. PC 135 at 28 citing PC 124 at 62-69.

Board Findings. The Board addressed the fugitive dust control plan under Subpart E and does not reiterate that discussion here. The Board declines to make any changes concerning worker safety under Section 845.710. The Board notes that the sub-docket mentioned above will investigate fugitive dust monitoring plans for areas neighboring CCR surface impoundments

Consideration of Cost in Closure Analysis. Dynegy argues that cost should be an explicit consideration in the Section 845.710 closure analysis. PC 126 at 11. Dynegy argues that this change will not impact the protection of human health and the environment because cost would only be considered when more than one closure method can achieve the groundwater protective standards. *Id.* Dynegy further argues that consideration of cost is consistent with the CCR rule and other regulatory programs. *Id.* Dynegy points to USEPA's preamble to the CCR Rule, stating that they expected cost to be an important factor in selecting a closure method. *Id.* at 11-12, *citing* 80 Fed. Reg. at 21,412 (Apr. 17, 2015), Hrg. Ex. 5. Next, Dynegy points to IEPA's testimony during hearing that the CCR Rule does not preclude cost from consideration, where other standards are otherwise met. *Id.* at 12, *citing* Tr. 3 at 238:3-8. Dynegy maintains that considering cost for corrective measures is also consistent with state and federal regulations like, USEPA's CERCLA program, its RCRA program, and Board landfill regulations. PC 126 at 12, *citing* Bittner Pre-Filed Test. at 12-14; 40 C.F.R. 300.430(e)(9)(iii)(G); 40 C.F.R. 257.26(c)(1)(iv); 35 Ill. Adm. Code 811.324(d). Dynegy proposes adding subsection (b)(3)(F) to Section 845.710:

(F) the costs of closure implementation. PC 126 at 12.

IEPA did not specifically address Dynegy's proposed addition to Section 845.710. However, the Environmental Groups contend that consideration of costs should be impermissible in both the development and implementation of these rules. PC 135 at 6. They note that IEPA's expert, Mr. Dunaway, made it clear that it is improper to consider costs in evaluating and approving proposals for corrective action, as well as closure alternatives. *Id.* at 5, *citing* Tr. 3 at 165, 236. The Environmental Groups also note that Dunaway answered no when he was asked if IEPA would consider cost of closure alternatives in evaluating construction permit applications for closure. *Id.* *citing* Exh. 2 at 61.

Finally, CWLP argues that the cost of closure by removal far outweighs the cost of any other closure method, and that its customer base of 68,000 will have to pay the entire cost of closure. PC 122 at 14. CWLP explains that the inability to recover the cost of closure from rate recovery directly affects whether an owner or operator decides to close by removal. *Id.*

Board Findings. Section 845.710 does not preclude an owner or operator from providing cost information to IEPA. However, IEPA's testimony indicates that it will not consider cost as a factor for evaluating closure analysis based on the USWAG decision. Tr. 3 at 236-237. In USWAG, the court relied on the US Supreme Court to determine that the RCRA regulations do not "show a textual commitment of authority to the [US]EPA to consider costs" and therefore RCRA does not authorize the EPA to consider costs. *See USWAG*, 901 F.3d at 448, *citing Michigan v. EPA*, 135 S. Ct. 2699, 2707 and 2709 (2015). Therefore, the Board finds that additional language is unnecessary and declines to accept Dynegy's addition to Section 845.710(b)(3).

Closure Plan

Section 845.720 specifies the requirements for a closure plan, including the preliminary closure plan, amendments to that plan, and the final closure plan. A closure plan is required before any closure activity begins.

Certifications. In response to Board questions, IEPA agrees that QPE certifications concerning closure plan compliance should be included in permit applications. PC 49, Att. 2 at 10-11. IEPA therefore proposes adding the phrase “and submit with its initial and renewal operating permit applications” to Section 845.720(a)(4), as well as adding the phrase “and submit with its construction permit application for closure” to Section 845.720(b)(5). *Id.*

Board Findings. The Board finds that these changes help clarify that the qualified professional engineer’s written certification—on the compliance of the initial and any amended preliminary written closure plan or the final written closure plan—must be submitted with the corresponding permit applications. The Board amends subsections (a)(4) and (b)(5) Section 845.720 accordingly at second notice.

Preliminary Written Closure Plan Contents. Subsection (a)(1) of Section 845.720 specifies the required contents of a preliminary written closure plan. As proposed by IEPA, that plan must include “the information specified in subsections (a)(1)(A) through (F).” JCAR proposes replacing those words with “the following:” JCAR Delta at 85 (June 22, 2020). IEPA opposes that change. IEPA observes that because “there are more subsections after (a)(1)(F),” JCAR’s proposed change “could make the rule unclear whether subsections (2), (3) and (4) are also to be included.” PC 120 at 7.

Board Findings. The Board accepts JCAR’s suggested change. It is unambiguous and less wordy than IEPA’s original language. Subsection (a)(1) lists six pieces of information at subsections (a)(1)(A) through (F). It is those six pieces of information that the preliminary written closure plan must include. There is no subsection (a)(1)(G); immediately after subsection (a)(1)(F) comes subsection (a)(2). Subsection (a)(2)—which requires the owner or operator to submit the preliminary written closure plan to IEPA with the initial operating permit application—cannot reasonably be misconstrued as a piece of information that must be included in that very plan. IEPA’s “intent to stop at (a)(1)(F)” is fulfilled by introducing the informational list with “the following:”. Moreover, IEPA’s proposal was replete with usage of “the following:” preceding lists, which the Board retains at second notice. *See, e.g.,* Sections 845.250(a), 845.260(b)(2), 845.310(a), 845.400(e), 845.430(a), 845.540(a)(1)(A), 845.660(c), 845.740(c)(4), 845.800(d)(14), 845.900(b).

Initiation of Closure

Section 845.730 prescribes the required timeframes for initiating closure activities. An owner or operator of a CCR surface impoundment must initiate closure within 30 days after the date on which the impoundment either: receives the known final placement of waste (CCR or any non-CCR waste); or removes the known final volume of CCR from the CCR surface

impoundment for the purpose of beneficial use of CCR.

The owner or operator of a CCR surface impoundment that is idled only temporarily, however, may apply with IEPA for a two-year extension on the two-year requirement for initiating closure. To receive this extension, the owner or operator must demonstrate there is reasonable likelihood that the impoundment either: (1) will resume receiving CCR or non-CCR waste streams in the foreseeable future and still has capacity to do so; or (2) will and can have CCR removed from it for beneficial use.

Finally, the Section 845.730 timeframes for initiating closure do not apply to the owner or operator of a CCR surface impoundment closing as required by Section 845.700.

Closure by Removal

Section 845.740 establishes requirements and procedures for closing a CCR surface impoundment by removal. These requirements address CCR removal and decontamination, groundwater monitoring, transportation plan for offsite disposal of CCR, onsite dust control, measures to prevent contamination of surface water, groundwater, soil and sediments, public notification and reporting. Upon completion of closure by removal, the owner or operator is required to continue groundwater monitoring for at least three years to demonstrate compliance with the proposed groundwater protection standards at the old site. Finally, this section requires a qualified professional engineer to certify both completion of CCR removal and decontamination, as well as completion of groundwater monitoring. Participants expressed concern regarding whether closure by removal should be considered as the preferred closure alternative. These concerns are discussed under “Closure Alternatives.” *See above at 80*

IEPA proposes several changes to Section 845.740 to clarify the proposed intent. First, IEPA amends subsection (a) using language from Part 257 addressing closure by removal to describe how to complete closure by removal and an additional statement that closure by removal must be completed before any groundwater corrective action. PC 120 at 87. This amendment, IEPA explains, is intended to ensure consistency of the proposed rules with Part 257, which treats closure by removal as a two-step process, i.e., the physical removal of all CCR, containment systems and related structures followed by the completion of any necessary groundwater corrective action. *Id.* at 86-87.

- a) Closure by removal of CCR. An owner or operator may elect to close a CCR surface impoundment by removing all CCR and removing and decontaminating all areas affected by releases of CCR from the CCR surface impoundment. CCR removal and decontamination of the CCR surface impoundment are complete when all CCR and CCR residues, containment system components such as the impoundment liner and contaminated subsoils, and CCR impoundment structures and ancillary equipment have been removed. Closure by removal must be completed before the completion of a groundwater corrective action pursuant to Subpart F. the CCR in the surface impoundment and any areas affected by releases from the CCR surface impoundment have been removed.

Additionally, IEPA proposes renumbering of Section 845.800(d) cross-references in subsections (d), (e) and (f) to reflect the proposed revisions to Section 845.800(d). *Id.*

Board Findings. The Board finds that IEPA's changes ensure that the proposed rules are consistent with Part 257 and adopts them at second notice.

Closure with a Final Cover System

Section 845.750 specifies the performance standards for closure of CCR Surface Impoundments that require closure to: control, minimize, or eliminate post-closure infiltration of liquids as well as releases of CCR, leachate, or contaminated run-off; preclude the potential for future impoundment of water, sediment, or slurry; include measures that provide for slope stability and minimize the need for further maintenance of the impoundment; and be completed in the shortest amount of time consistent with generally accepted engineering practices. Exh. 2 at 44. Additionally, this section prescribes standards for drainage and stabilization, and final cover system. *Id.*

Many members of the public expressed concerns over the broader issue of whether the proposed rules should allow closure in place. PC 23. These concerns are addressed under the closure alternatives analysis in Section 845.710. The Board addresses the participants' specific concerns regarding the proposed provisions for closure with a final cover system.

The Environmental Groups argue that owners or operators are not required to submit progress reports during closure in place. PC 124 at 81. Their argument is that closure by removal requires monthly progress reports, but closure in place does not require any progress reports. *Id.* The Environmental Groups recommend that the Board require least quarterly reports on the progress of closure in place to ensure that IEPA is aware of any pitfalls or problems. *Id.*

Final Cover System Standards. Dynegy contends that the default final cover standards for both the low permeability layer and the final protective layer under Section 845.750 "greatly exceed the requirements of the CCR rule." PC 126 at 4. Dynegy argues that IEPA merely based the final cover standards on the landfill rules and did not complete its own independent assessment. *Id.* Relying on testimony by its expert, Dr. Rudy Bonaparte, Dynegy asserts that the CCR surface impoundments experience much less post-closure settling than landfills, and as a result the thickness of earthen low permeability layer could be reduced from 36-inches to 18-inches. *Id.* at 4-5 citing Bonaparte PFT at 7-8. Further, Dynegy argues that the thickness of the final protective layer can also be reduced from 36-inches to 18-inches when used with low permeability layer consisting of a geomembrane. *Id.* at 7. Here, Dynegy relies on Mr. Bonaparte's testimony that Part 845 allows geomembrane low permeability layers that are not vulnerable to damage by freeze/thaw cycles or root damage. PC 126 at 5, *citing* Bonaparte Pre-Filed Test. at 9-10.

David Hagen, Dynegy's other expert, agrees with Dr. Bonaparte's position and presented groundwater modeling to show that Dynegy's proposed reduction of the final cover standards would not meaningfully affect the amount of precipitation entering the impoundment post-closure or the time required to achieve the groundwater protection standards. PC 126 at 5, *citing*

Hagen Pre-Filed Test. at 32-24; Hagen Pre-filed Resp. at 53. Thus, Dynegy asserts that its proposal “represents a compromise between the [federal] CCR Rule and IEPA’s proposed standards, maintaining the stringent hydraulic conductivity requirements of IEPA’s proposal, while reducing the amount of earthen material used to construct a cover.” *Id. citing* Bonaparte Pre-filed Test. at 8-9.

IEPA opposes Dynegy’s revisions noting that the proposed final cover system requirements are based on the current practices required for landfills in Illinois under 35 Ill. Adm. Code 811.314. PC 129 at 35. IEPA maintains that the proposed final cover standards are not overly protective because unlike landfills “existing CCR surface impoundments closed with CCR in place have no low permeability liners and no leachate collection and removal systems.” *Id.* IEPA also notes that Mr. Bonaparte testimony indicates that Dynegy’s proposed final cover system may not meet the performance standards of Section 845.750(a) in all locations and may require one or more additional engineering measures to comply. Hrg, Ex. 31, p. 6-7. IEPA asserts that in order to comply, “it is not protective of groundwater to utilize a final cover which may or may not meet the performance standards and simply rely one or more additional engineering measures.” PC 129 at 35. IEPA maintains that it is inappropriate to rely on implementing remedial measures to address inadequate final cover system.

Board Findings. The Board recognizes that the proposed minimum requirements for the final cover system exceed the federal rule requirements for the thickness of the low permeability and final protective layers. The Board finds, however, that the more stringent requirements are justified because most existing CCR surface impoundments that will be closed in place have no low permeability liners. As noted by IEPA, the proposed 3-foot minimum thickness for both the compacted earth low permeability layer and the final protective layer are based on Illinois’ landfill standards under 35 Ill. Adm. Code 811.314, which have been implemented for over 25 years. In 2011, the Board found that the Part 811 landfill final cover requirements were appropriate for the closure of Hutsonville Power Station’s Ashpond D under 35 Ill. Adm. Code 840.126.

Although Dynegy contends that its proposal to reduce the thickness of both the low permeability and final protective layers is as protective as the proposed rule, the Board finds Dr. Bonaparte’s testimony that Dynegy’s proposal for final cover system may not meet the performance standards under certain site-specific conditions troubling. In adopting the rule of general applicability, the Board finds it appropriate to adopt final cover standards based on a well-proven design standard under Part 811 rather than Dynegy’s proposed standard that may require implementation of additional remedial measures to meet the performance standards of this section. The Board declines Dynegy’s revisions to the final cover systems under Section 845.750.

The Board proposes IEPA’s final cover standards for second notice. As with landfills, the owner or operator of a CCR surface impoundment may petition for an adjusted standard if it believes less stringent standards are appropriate for site-specific reasons.

Completion of Closure Activities

Section 845.760 requires the owner or operator to complete closure within the timeframe approved by IEPA in the final closure plan, or within 5 years, whichever is less. The section also sets forth requirements for any extensions of closure timeframes if applicable. Regarding extensions for closure by removal of CCR, IEPA notes that the proposed provision under subsection (c)(3) is based on USEPA's March 3, 2020 proposal (85 FR 12456), which divides closure by removal into a two-step process: the physical removal of all CCR, containment systems and related structures; and the completion of any necessary groundwater corrective action. PC 120 at 86, 89. To be consistent with USEPA's two-step process, IEPA proposes revising subsection (c)(3) as follows:

- 3) CCR surface impoundments that are closing by removal may extend the time to complete closure multiple times, in two-year increments. For each two-year extension sought, the owner or operator must substantiate the factual circumstances demonstrating the need for the extension. In no instance may the time allowed for closure by removal be extended beyond the completion of a groundwater corrective action required by pursuant to [Section] 845.680(c)(1). *Id.* at 89.

Board Findings. The Board finds that IEPA's changes ensure that the proposed rules are consistent with Part 257 and adopts them at second notice.

Retrofitting

Section 845.770 describes the requirements to retrofit a CCR surface impoundment. Before retrofitting can begin, the owner or operator must complete a written retrofit plan to be submitted with a construction permit application. Once retrofit is complete, the owner or operator must submit a retrofit completion report. The Board discusses changes proposed by Midwest Generation and IEPA.

Removal of Existing Liner. Midwest Generation's experts, Sharene Shealey and David Nielsen, testified that Section 845.770(a) requires the removal of existing, competent, uncontaminated geomembrane liners. They maintain that the rule should allow the use of a competent liner "that is not contaminated with CCR constituents" as a supplemental system to add to the composite liner which is required by the rules to avoid unnecessary removal costs without any added benefit or protection. 9/30/20 Tr. at 196, Exh. 50 at 15. Ms. Shealey stated that Section 845.770 (a)(1) should be modified by removing the phrase "including any liner" to allow the use of a competent existing liner.

Upon questioning by the Board, Midwest Generation's experts clarified that it would be acceptable to clarify subsection (a)(1) to require only "contaminated" liners to be removed during retrofit. PC 125 at 28, *citing* Ex. 50 at 1. Midwest Generation maintains that a synthetic liner is not likely to absorb CCR constituents, and even those with pinholes can be repaired. PC 125 at 28, *citing* 9/30/20 Tr. at 199:7-8, Ex. 52 at 12. Therefore, Midwest Generation argues that there is no reason to require removal of liners when retrofitting a facility. PC 125 at 28. IEPA raised concerns regarding how an owner or operator could demonstrate whether a liner is

contaminated. 9/30/20 Tr. at 198 -199. Mr. Nielsen explained that given that synthetic liners are not likely to absorb CCR constituents, a visual inspection coupled with swab tests submitted for analytical testing would suffice. *Id.* at 199. He noted that visual inspection has been used by the State of Minnesota for demonstrating if a liner is clean.

Board Findings. Midwest Generation has raised a valid concern about removing competent, uncontaminated existing synthetic (geomembrane) liners while retrofitting CCR surface impoundments. The Board sees no reason for requiring removal of these liners if they can be used as a supplement to the liner system required by this Part. However, an existing geomembrane liner may be left in place only if the owner or operator demonstrates that it is not contaminated with CCR constituents, relying on both visual inspection and analytical testing. Therefore, the Board adds an exception to the liner removal requirement. The exception will allow an owner or operator to seek IEPA's approval for using an existing competent geomembrane liner as a supplemental liner by demonstrating that the liner is not contaminated with CCR constituents. At second notice, the Board changes Section 845.770(a) to reflect the new exception:

a) To retrofit an existing CCR surface impoundment, the owner or operator must:

1) First remove all CCR, including any liners except as specified in subsection (a)(4), as necessary, and contaminated soils and sediments from the CCR surface impoundment; ~~and~~

* * *

4) An owner or operator may request the Agency to approve the use of an existing competent geomembrane liner as a supplemental liner by submitting visual inspection, and analytical testing results to demonstrate that the existing liner is not contaminated with CCR constituents.

Consistency with 40 C.F.R. 257. Based on reviewing the August 28, 2020 Part 257 amendments on the time-extension requirements, IEPA identifies an omission in the rules it proposed. PC 120 at 90, citing 85 Fed. Reg. 53516 (Aug. 28, 2020). Specifically, Section 845.770 does not “clearly identify a requirement for owners and operators of CCR surface impoundments who intend to retrofit pursuant to Section 845.770 to notify the Agency of this intent and determine a prioritization category, prior to submission of a construction permit.” *Id.* To remedy this omission, IEPA proposes adding a new subsection (a)(3) to Section 845.770(a), requiring that an owner or operator submit a written preliminary retrofit plan to IEPA and post it in the owner's or operator's operating record:

3) No later than 30 days after the effective date of this Part, the owner or operator electing to retrofit a CCR surface impoundment pursuant to this Section shall submit a written preliminary retrofit plan to the Agency and post the written preliminary retrofit plan in the facility's operating record as required by Section 845.800(d)(27). The written preliminary retrofit plan must include a prioritization categorization under Section 845.700(g) and the expected construction permit application date under 845.700(h).

Additionally, IEPA proposes minor revisions to Sections 845.770(d), (g), and (h) that involve renumbering cross-references to Section 845.800(d) to reflect the changes made to Section 845.800. *Id.*

Board Findings. The Board finds that IEPA's proposed changes make the rules consistent with the federal rules at 40 C.F.R. 257 and clarifies the application of the Section 845.800(d) provisions. The Board therefore proposes IEPA's changes to Section 845.770 at second notice. But, to clarify the 30-day deadline for the preliminary retrofit plan, the Board will fix a specific date in Section 845.770(a)(3) at final adoption. *See* 5 ILCS 100/5-40(d) (2018).

Post-Closure Care Requirements

Section 845.780 sets forth post-closure care requirements for an owner or operator who completes an IEPA-approved closure. An owner or operator who elects to complete closure by removal is not subject to this section but will be subject to other sections within this Subpart. Post-closure care includes maintaining the integrity and effectiveness of the final cover system, maintaining the integrity and effectiveness of and operating the leachate collection and removal system, and maintaining and operating the groundwater monitoring system. The post-closure care procedures must continue for 30 years, at which point the owner or operator must continue post closure care at least until groundwater monitoring shows concentrations below the groundwater protection standards. Section 845.780 also includes requirements for a written post-closure plan and explains how to request a plan amendment.

Applicability. IERG urges the Board to add "if applicable" to the end of Section 845.780(b)(3), which IERG argues would clarify the rule language and prevent confusion over which requirements are applicable to inactive closed CCR surface impoundments. PC 121 at 3-4. IEPA argues that Subpart F is not listed in Section 845.170, which deals with inactive closed CCR surface impoundments, and therefore there is no reason to add "if applicable." PC 129 at 4. Additionally, IEPA proposes a minor revision to Section 845.780 (f) that renumbers the cross-references to Section 845.800(d) to reflect the changes made to Section 845.800(d). PC 120 at 119.

Board Findings. Regarding IERG's suggestion, the Board notes that Section 845.780(b)(3) specifically requires the maintenance of the groundwater monitoring system and monitoring of the groundwater in compliance with the requirements of Subpart F. However, as noted by IEPA, Subpart F is not applicable to inactive closed CCR Surface Impoundments under Section 845.170(a). Further, the Board agrees with IEPA that the addition of the phrase "if applicable" to Section 845.780(b)(3) to address four inactive closed CCR Surface Impoundments would create uncertainty in implementation of the generally applicable provision that applies to a large number of existing CCR Surface Impoundments. Therefore, the Board declines IERG's suggested change to Section 845.780(b)(3). The Board, however, accepts for second notice IEPA's proposed change Section 845.780(f) that clarifies the application of Section 845.800(d) provisions.

Subpart H: Recordkeeping

Subpart H describes the recordkeeping requirements for owners and operators to demonstrate compliance with the Part 845. These records include the operation record (Section 845.800) and provisions for information to be included on a website (Section 845.810). The Board details the issues and discusses any resulting rule changes under the relevant sections below.

Facility Operating Record

Section 845.800 require the owner or operator to maintain, at the facility, a written record of specified information for up to three years after terminating post-closure care. Section 845.800(b). The operating record must include items such as permit applications and permits, recordings of public meetings, CQA reports, hazard potential classification assessments, structural stability assessments, safety factor assessments, fugitive dust control plans, inflow design flood control system plans, documentation of inspections, and an annual consolidated report. Section 845.800(d). The rules also require maintaining records on groundwater monitoring, including reporting any exceedances of monitored constituents. *Id.* The closure plan and reports are also considered a part of the operating record and must be maintained along with cost estimates. *Id.*

Contents of Operating Record. Because of USEPA amendments to Part 257, IEPA proposes adding a new subsection (d)(19) and (27) to Section 845.800:

- 19) USEPA-approved or denied demonstration as required by Section 845.700(d)(2)(F).
- 27) The preliminary written retrofit plan for a CCR surface impoundment as required by Section 845.770(a)(3).

IEPA would then renumber the remaining subsections of Section 845.800(d). According to IEPA, this addition is necessary to ensure consistency with the federal rules on time extensions for certain CCR facilities. *Id.*

Board Findings. After reviewing USEPA’s rule amendments, the Board agrees with IEPA that adding Section 845.800(d)(19) is necessary to ensure consistency with 40 C.F.R. 257. At second notice, the Board does so and renumbers the ensuing subsections accordingly.

Timing of Placement in Operating Record. The Environmental Groups stress that “‘meaningful’ public participation” requires that the rules be clear on “when items are to be posted to the CCR surface impoundment’s operating record and, thus, posted online.” PC 124 at 96. Absent “clear timelines,” the public “may not have all the necessary documents to review as part of the permit application’s notice and comment process.” *Id.* The Environmental Groups therefore propose changes to Section 845.800(d):

- d) Unless otherwise required below, the ~~The~~ owner or operator of a CCR surface impoundment must place the following in the facility's operating record within 1 day of their completion or finalization: *Id.* at 105.

Board Findings. Generally, as discussed below, the owner or operator must post permit applications and other listed documents to its publicly accessible website within 30 days after adding the document to its operating record (Sections 845.800(d)(7), 845.810(d)). But the rules are silent on *when* permit applications and many other documents must be placed in the *operating record* (Section 845.800(d)).⁹ The Board fills this gap at second notice. Not doing so would risk undermining the General Assembly's directive that the rules "specify meaningful public participation procedures" for permit issuance, including public comment.

The Board agrees with the Environmental Groups that it is necessary to add a timing requirement for placing documents in the operating record. But the Board has no basis for imposing the Environmental Groups' suggested placement deadline of one day after document "completion or finalization." Instead, the Board borrows language from USEPA (40 C.F.R. § 257.105). Specifically, the Board adds the phrase "as it becomes available" to Section 845.800(d): "Unless otherwise required below, the ~~The~~ owner or operator of a CCR surface impoundment must place the following information, as it becomes available, in the facility's operating record."

Publicly Accessible Internet Site

Section 845.810 requires the owner or operator to establish and maintain a website that includes the information in the operating record. Sections 845.810(a), (e). The proposed title for the website is "CCR Rule Compliance Data and Information." Section 845.810(a). An owner or operator of multiple impoundments may use a single website if the website clearly delineates the information for each impoundment. Section 845.810(b). The website must be publicly available until at least three years after the post-closure care or completion of groundwater monitoring. Section 845.810(c). The website must be updated regularly and IEPA will maintain a list of all CCR websites on its own website. Sections 845.810(d), (f), (g).

Number of Public CCR Websites. The Environmental Groups and CWLP both asked questions about the requirement that an owner or operator maintain a website, separate from the website required by 40 C.F.R. 257. *See generally* Tr. 8/25/20 at 129-33. Concerns were raised about the viability of two websites, and whether the presence of two websites would be confusing.

CWLP comments that the purpose of a publicly available website is to make it easier for citizens to obtain information about CCR facilities and two websites would run counter to that

⁹ Two of the over 30 types of documents have a timing requirement for placement in the facility's operating record. The owner or operator must place specified notifications within 30 days after either completing the corrective action plan or detecting one or more monitored constituents above the groundwater protection standard. *See* Sections 845.800(d)(16), (d)(18).

goal. *Id.* CWLP suggests that IEPA is only setting up a second website for IEPA's convenience. *Id.*

In response to these concerns, IEPA explains that ease of access to a program IEPA will be overseeing is a legitimate reason alone to require two websites. However, IEPA explains further that documents will be organized differently under the Illinois program and there are additional requirements in the Illinois program for materials to be included. Therefore, IEPA does not believe it is unreasonable to require the use of two websites for CCR facilities. PC 129 at 36. To alleviate any potential confusion, IEPA proposes to amend Section 845.810(a) to require the title of the website maintained under Subpart H to be "Illinois CCR Rule Compliance Data and Information." PC 120 at 95.

Board Findings. On this record, the Board cannot find that maintaining two websites would present any hardship to an owner or operator of a CCR surface impoundment that would outweigh the public good of having two websites. Requiring an Illinois CCR website will allow the public the opportunity to review the Illinois requirements, which may be more extensive or at the very least different from the federal requirements. The Board agrees with IEPA that to alleviate confusion, the Illinois site should be designated as such. The Board therefore amends Section 845.810(a) at second notice by adding "Illinois" to the title of the website.

Timing of Posting to Public CCR Website. Above, the Board addressed the Environmental Groups' request that the documents specified in Section 845.800(d) be placed in the operating record within one day after their being completed or finalized. The Environmental Groups also ask that Section 845.810(d) be amended. PC 124 at 96. Specifically, they seek to seek to speed up the deadline—for when an owner or operator must to post a document to its public CCR website—from 30 days to 14 days after the document's placement in the operating record. *Id.* The Environmental Groups maintain that 14-day posting "poses a low burden" but will "ensure that the public can meaningfully participate in the pre-application public meeting and the public comment period." *Id.*

Board Findings. IEPA must post notice to its website that it has received a permit application and email the notice to IEPA's listserv for the facility (Section 845.260(a)). As discussed above, that permit application must be placed in the operating record "as it becomes available" (Section 845.800(d)). The 30-day public comment period cannot begin until IEPA gives public notice of its tentative determination (Sections 845.260(b), (c)(1)); IEPA cannot give public notice earlier than 15 days after notifying the applicant of its tentative determination (Section 845.260(b)(1)). And IEPA's tentative determination, of course, necessarily follows its review of the complete permit application (Section 845.250).

Accordingly, even a 30-day delay between when the owner or operator places the permit application in the operating record and posts it on the facility's public website, the Board would expect the permit application, in the ordinary course, to be available on the facility's public website for the entire 30-day public comment period. And, in fact, IEPA explained that its public notice triggering the comment period would ordinarily follow the permit application's appearance on the public website. Aug 12 TR at 84. The Board makes the following changes to Sections 845.810(d) and (f):

- d) Unless otherwise required in this Section, the information must be posted to the CCR website within ~~30~~ 14 days after placing the pertinent information required by Section 845.800 in the operating record.

- f) The owner or operator must place all the information specified in Section 845.240(e) on the owner's or operator's CCR website at least ~~44~~ 30 days before ~~prior to~~ the public meeting.

Subpart I: Financial Assurance

As mandated by Section 22.59 of the Act (415 ILCS 5/22.59), Subpart I specifies the financial assurance requirements that must be met by owners or operators of CCR surface impoundments.

General Provisions on Financial Assurance

Under Section 845.900, financial assurance must be sufficient to allow for completion of closure and, if applicable, post-closure care, as well as remediation of releases. Section 845.900(b). The financial assurance must be sufficient to cover cost estimates calculated under the rules and be in the form of a: (1) trust agreement, (2) surety bond guaranteeing payment, (3) surety bond guaranteeing payment or performance, or (4) an irrevocable letter of credit. Section 845.900(c), (d). Section 845.900 delineates IEPA's responsibilities and which IEPA determinations may be appealed to the Board.

Board Findings. Section 845.900(b) specifies what the owner or operator must provide financial assurance to ensure. Dynege suggests changing Section 845.900(b)(3) by replacing the proposed language ("Remediation of releases from a CCR surface impoundment") with "corrective action, if applicable." PC 125 at 52. Dynege explains that this change clarifies subsection (b)(3) and makes it consistent with Section 845.920(b)(3) (*id.*), which concerns when IEPA will release an owner or operator from the financial assurance requirements for corrective action.

Cost Estimates

Under Section 845.930, the owner or operator must establish cost estimates for closure and post-closure care, as well as remediation and corrective action because of a release. The cost estimates must be a detailed, written estimate that considers the potential necessity of contracting with a third party to complete operations.

The Environmental Groups raised a concern about a situation where cost estimates increase, but the owner or operator lacks the ability to obtain financial assurance sufficient to meet the increased costs. Tr. 8/25/20 at 138. The rule does not address this scenario. *Id.* To

address this potential gap in financial assurance, IEPA suggests amending Section 845.930(a) to clarify that cost estimates must be submitted to IEPA for approval. PC 120 at 95.

Board Findings. The Board finds that IEPA’s proposed clarification of Section 845.930(a) is appropriate. The Board also finds that in subsection (a)(3), the word “correction” should be replaced with the word “corrective,” as in “corrective action.” Therefore, at second notice, the Board amends Section 845.930(a)(3) as follows:

- a) The owner or operator must prepare and submit to the Agency, for approval, written cost estimates for:
- 3) The ~~the~~ total costs of the ~~correction~~ corrective action plan for remediation of any releases from a CCR surface impoundment.

CONCLUSION

The Board proposes Part 845 for second notice. These CCR surface impoundment rules will meet and, where warranted, exceed federal CCR regulations, ushering in an era of heightened protection for groundwater and human health throughout Illinois. Guided by the General Assembly’s directives, the rules will also provide meaningful avenues for public participation, as well as measures to identify and safeguard environmental justice areas. Further, the Board finds that its second-notice proposal will not have an adverse economic impact on the people of the State of Illinois. *See* 415 ILCS 5/27(b) (2018).

The Board greatly appreciates the thoughtful contributions made to this rulemaking’s record over the past year by IEPA and all other participants in this proceeding. The Board especially commends members of the public for their time, effort, and interest. This invaluable collective effort is reflected in the rules proposed today.

ORDER

- 1. The Board directs its Clerk to submit the proposed rules to JCAR for second-notice review. The proposed rules appear in the addendum to this order.
- 2. The Board directs its Clerk to open a sub-docket to solicit more information and evidence, as well as proposed rules, on the following:
 - a. Historic, unconsolidated coal ash fill in the State;
 - b. The use of temporary storage piles of coal ash, including time and volume limits;
 - c. Fugitive dust monitoring plans for areas neighboring CCR surface impoundments; and

- d. The use of environmental justice screening tools.

IT IS SO ORDERED.

I, Don A. Brown, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on February 4, 2021, by a vote of 4-0.

A handwritten signature in cursive script that reads "Don A. Brown". The signature is written in black ink and is positioned above a horizontal line.

Don A. Brown, Clerk
Illinois Pollution Control Board