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Subject: **Comments in Response to Proposed Denial of CCR Part A Site-Specific Alternative Deadline to Initiate Closure**
Interstate Power and Light Company – Ottumwa Generating Station
Ottumwa, Iowa
Docket ID: EPA-HQ-OLEM-2021-0593

Interstate Power and Light Company (IPL), Alliant Energy's Iowa utility company, is providing comments in response to the United States Environmental Protection Agency's (EPA) proposed denial of a request for a site-specific alternative deadline to cease disposal of waste and initiate closure of the Ottumwa Generating Station's (OGS) Main Ash Pond (OGS Ash Pond). We appreciate EPA's openness to discussing the issues addressed below during the formation of comments and the consideration of the information herein. Based upon the status of the work completed at OGS and the corrections to the record provided herein, IPL respectfully requests that EPA reconsider the proposed denial and instead approve OGS' application in full.

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INTRODUCTION

On August 28, 2020, EPA published the Coal Combustion Residuals (CCR) Rule Part A Implementation Final Rule, which, for the first time, required all unlined CCR surface impoundments to cease receipt of CCR and non-CCR wastewaters and initiate closure. In the Part A Rule, EPA required facilities to cease disposal of waste and initiate closure no later than April 11, 2021, unless a site-specific extension was requested by the facility and approved by EPA. Following publication of the Part A Rule, Interstate Power and Light Company (IPL), a wholly owned subsidiary of Alliant Energy Corporation, engaged EPA to discuss operations at the Ottumwa Generating Station (OGS), the need for alternative disposal capacity, CCR Rule compliance requirements, and preparation of the Demonstration. On November 25, 2020, IPL submitted a Demonstration (referred to as the "Demonstration" in this document) pursuant to 40 C.F.R. § 257.103(f)(1) requesting additional time to develop alternative capacity to manage CCR and non-CCR wastestreams at OGS that have been managed within the OGS Ash Pond. The Demonstration was shaped by EPA feedback gathered in discussions prior to November 25, 2020 and described IPL's approach for developing new treatment capacity and ending discharges to the OGS Ash Pond.

After submittal of the Demonstration, IPL, in good faith, began developing alternative capacity at OGS by excavating an inactive CCR surface impoundment and constructing a new lined pond within the same space. Construction of the new lined pond, which was the fastest technically feasible method of developing alternative capacity for managing the non-CCR wastewaters discharged to the OGS Ash Pond, was completed in late 2021. During this time, IPL did not receive any substantial inquiries from EPA or receive any feedback on the Demonstration. It was not until January 11, 2022 – nearly fourteen months after submittal of the extension request – that IPL first learned of EPA's concerns when EPA proposed to deny the request to extend the date to end discharges to the OGS Ash Pond, despite the extensive time and investment by IPL to develop alternative disposal capacity as fast as technically feasible and in accordance with the approach outlined in the Demonstration.

In the document describing the basis for the proposed denial, EPA reaches preliminary conclusions regarding OGS's efforts to end discharges to the OGS Ash Pond, develop alternative capacity, and comply with the CCR Rule that are based in part on compliance documents developed by IPL, and in part on policy positions that, to IPL's knowledge, had not been formally articulated to the regulated community prior to releasing the proposed decision. While IPL finds it disappointing that EPA did not seek to understand any updates to OGS operations following submittal of the Demonstration, IPL rule interpretations, or the impact of its untested policy positions before publishing its proposed denial (hereinafter, Proposed Decision), IPL is submitting the comments below to clarify OGS operations and demonstrate IPL's commitment to ongoing compliance with the federal CCR Rule. Further, IPL respectfully requests that EPA reconsider the proposed denial and instead approve OGS' application in full based upon the progress that has been made at OGS to manage CCR and non-CCR wastestreams and the information provided within as supplements to the application.

COMMENTS ON PROPOSED DECISION

I. Facility Description and Updates on Facility Actions Taken Since November 2020

EPA has accurately described the coal-fired generating unit at OGS and the two CCR surface impoundments: the OGS Ash Pond and the OGS Zero Liquid Discharge (ZLD) Pond. The OGS ZLD Pond is an inactive CCR surface impoundment that contained CCR and liquids when the CCR Rule became effective in 2015, but it has not received CCR since 2015. The OGS Ash Pond is an existing unlined CCR surface impoundment that stopped receiving sluiced CCR in September 2020, when OGS initiated an outage to install a new dry ash handling system. As described in the Demonstration, IPL proposed to develop alternative disposal capacity for the non-CCR wastestreams by excavating the OGS ZLD Pond and constructing a new lined treatment pond in the same area. EPA has proposed that this approach is the fastest technically feasible method of developing disposal capacity.[1] Notably, the Demonstration described IPL's method of achieving this result, including the placement of excavated material into the OGS Ash Pond. IPL justified this placement of CCR into the OGS Ash Pond based on the understanding that the April 11, 2021, deadline described in §257.101(a)(1) would be tolled for facilities that submit a complete Demonstration to comply with the alternative closure procedures specified in §257.103, as described below:

> 40 CFR 257.101(a):
>
> "The owner or operator of an existing unlined CCR surface impoundment, as determined under § 257.71(a), is subject to the requirements of paragraph (a)(1) of this section.
>
> (1) **Except as provided by paragraph (a)(3)** of this section, as soon as technically feasible, but not later than April 11, 2021, an owner or operator of an existing unlined CCR surface impoundment must cease placing CCR and non-CCR wastestreams into such CCR surface impoundment and either retrofit or close the CCR unit in accordance with the requirements of § 257.102.
>
> …
>
> (3) The timeframe specified in paragraph (a)(1) of this section does not apply if the owner or operator complies with … the alternative closure procedures specified in § 257.103."

Since submitting the Demonstration, IPL ceased disposal of CCR in the OGS Ash Pond and has made significant progress toward eliminating disposal of non-CCR wastestreams in the OGS Ash Pond.[2] At this time, the plant is ahead of the schedule submitted in the Demonstration due to efforts by IPL and the contractor to identify and implement actions to expedite the work. Specifically, the following steps have been completed since November 2020:

[1] Proposed Decision at 28.

[2] As noted in the OGS Site-Specific Alternative Demonstration, IPL ceased sluicing CCR wastestreams into the OGS Ash Pond in September 2020. The final CCR wastestreams were placed in the OGS Ash Pond in September 2021 as part of the closure by removal efforts for the ZLD Pond.

- Placed the new Dry Bottom Ash Handling System into service.
- Received bids and awarded contract to repurpose the ZLD Pond into the Low Volume Wastewater Treatment Pond (LVWTP).
- Submitted and received permit approval for the construction of the LVWTP.
- Removed CCR material (and contaminated soils) from the ZLD Pond.
- Completed installation of the alternative composite liner system (consisting of a geosynthetic clay liner and a high-density polyethylene membrane) in the LVWTP.
- Completed installation of an Ultraviolet Treatment system to treat sanitary discharge prior to outfall.
- Began installation of piping to divert non-CCR wastestreams to the LVWTP.
- Completed installation of the outfall structure in the LVWTP.
- Completed installation of a new outfall that will combine wastestreams from the LVWTP, Coal Pile Runoff Pond, and Cooling Tower Blowdown and will discharge to the Des Moines River.
- Submitted NDPES Permit modification to IDNR to allow discharge from the new Outfall to the Des Moines River.
- Completed installation of new piping to convey Cooling Tower Blowdown to the new outfall when it is not utilized in the scrubber.

At this time, only a few remaining items must be completed before wastestreams can be diverted from the OGS Ash Pond to the LVWTP. The remaining tie-ins for non-CCR wastestreams will be completed during an upcoming planned outage beginning in late March and extending through April of this year. Once these tie-ins are completed, wastestreams will be permanently diverted to the LVWTP. Thus, IPL currently anticipates that placement of non-CCR wastestreams in the OGS Ash Pond will permanently end by May 1, 2022.

Note that discharge from the new LVWTP outfall structure cannot occur until a modification to the OGS NDPES Permit is approved by IDNR and becomes effective. If discharges from the LVWTP are necessary following the tie-ins and prior to the effective date of the NPDES permit modification, OGS plans to discharge non-CCR wastewaters by pumping directly to the existing outfall and discharging in accordance with the current NPDES permit.

II. Comments on Alternative Disposal Capacity Issues

A. CCR from the Hydrated Fly Ash Pile is not being placed in the OGS Ash Pond.

EPA is proposing to determine that IPL has not demonstrated that there is no existing on- or off-site disposal capacity for the hydrated fly ash pile.[3] Specifically, EPA states that the OGS Demonstration indicates that contents of the hydrated fly ash pile will be placed in the OGS Ash Pond during closure of the unit, but this statement is not correct.

IPL did not discuss disposal of the hydrated fly ash pile in its Demonstration because it does not intend to place that material into the OGS Ash Pond. This material is beneficially used offsite and will not be used during closure. This is indicated in Section 4 of the CCR Closure Plan dated November 16, 2020, located on the Ottumwa CCR Website. While the original closure plan dated September 8, 2016, contemplated consolidation of this material into the OGS Ash Pond for

[3] Proposed Decision at 17.

disposal, IPL has since committed to continue using this material offsite as a road base under asphalt or concrete or as a raw material in the production of cement. Markets for the hydrated fly ash have been in existence for many years, as evidenced by IPL's consistent beneficial use of the material. When used responsibly and in accordance with state and federal rules, the hydrated fly ash is a resource that offsets the extraction of other natural resources. As such, it is IPL's intention to utilize this resource and not place it within the OGS Ash Pond during closure.

Because IPL does not intend to place material from the hydrated fly ash pile into the OGS Ash Pond, discussion of the material was not required as part of the Demonstration. EPA therefore cannot deny IPL's extension request on this basis.

B. All ZLDP material has been removed and disposed of in the OGS Ash Pond.

EPA is proposing to determine that IPL has not met the criteria in 40 C.F.R. § 257.103(f)(1)(i) and (ii)(A) to demonstrate that there is no on- or off-site disposal capacity for the material removed from the ZLD Pond.[4] EPA has also proposed that the off-site Ottumwa-Midland Landfill potentially represents off-site alternative capacity for this material. IPL provides additional details below regarding alternative disposal capacity for the ZLD Pond material.

As the only active CCR unit onsite, the OGS Ash Pond is the only onsite disposal alternative for CCR material. The material in the ZLD Pond could have been consolidated into a portion of the ZLD Pond footprint and capped in place; however, this would have reduced the space available for the new LVWTP, which is sized to manage expected flows from the facility and provide the requisite treatment capacity. EPA has proposed to conclude that IPL has adequately justified the choice to construct a new LVWTP to provide alternative capacity for non-CCR wastestreams.[5] This choice, and EPA's proposed conclusion, are based upon the availability of the entire footprint of the ZLD Pond for the new pond.

With respect to offsite alternatives, it is possible that this material could have been disposed of in the Ottumwa-Midland Landfill (OML), but only after the material was sufficiently conditioned to haul over the road. Material excavated from the ZLD Pond was too wet to safely haul over the road, and the only spaces available for conditioning were within the ZLD Pond or within upland (dry) areas of the OGS Ash Pond. IPL's contractor was able to utilize large off-road trucks to haul CCR material to dry areas of the OGS Ash Pond where it was spread out and dried. Using the OGS Ash Pond freed space within the ZLD Pond for concurrent sub-base preparation and liner installation, which allowed for completion of the new LVWTP liner prior to contractor demobilization for the 2021-2022 winter season. If the material was destined for OML without placement in the OGS Ash Pond, the material would have needed to be dried / conditioned on site, excavated, and again placed into smaller highway-rated dump trucks to haul to the OML facility. This process would have required an additional 1-2 months for the added handling and hauling of the CCR and would have pushed out completion of the new LVWTP further into 2022 due to winter conditions. Thus, OML may have been a feasible off-site disposal option for CCR removed from the ZLD Pond following on-site conditioning, but doing so would have delayed the schedule for eliminating the disposal of non-CCR wastestreams in the OGS Ash Pond. Placing the material removed from the ZLD Pond into the OGS Ash Pond, where the deadline to

[4] Proposed Decision at 16-17.
[5] Proposed Decision at 25-28.

cease receipt of waste was (and remains) tolled (see § 257.103(f)(3)(ii)), therefore served to minimize the overall time required to cease all waste disposal in the OGC Ash Pond.

IPL discussed the current workplan with EPA prior to submittal of the Demonstration in November 2020[6] and described the planned approach to consolidate CCR material on site as a more environmentally preferable approach to minimize the total capped area onsite. At that time, EPA did not indicate any concerns with this approach.

In any case, all material from the ZLD Pond has been placed in the OGS Ash Pond and was spread/dried at that location and IPL no longer requires an extension to continue placing CCR from the ZLD Pond. Any failure of IPL to adequately demonstrate that there was no available on- or off-site capacity for a wastestream that no longer requires an extension should not preclude an approval of an extension for other wastestreams. The Part A rule fully contemplates that EPA can approve and/or deny extensions for specific wastestreams, rather than denying an application in full.[7]

C. It is not technically feasible to dispose of non-CCR wastestreams on-site.

EPA has proposed that IPL has not adequately demonstrated that there is no available on-site disposal capacity for certain non-CCR wastestreams, including Cooling Tower Blowdown, CCR landfill leachate, ultrafilter backwash, condensate polisher wastewater, miscellaneous plant drains, and on-site sewage treatment[8]. IPL describes below why it is not feasible to manage these wastestreams on-site, except for use of the OGS Ash Pond.

1. Coal Pile Runoff Pond Treatment Capacity

EPA explains that IPL should have described why the Coal Pile Runoff Pond cannot be used to dispose of the smaller non-CCR wastestreams or the non-CCR wastestreams that do not require additional treatment, such as Cooling Tower Blowdown[9]. The Coal Pile Runoff Pond is an existing on-site non-CCR surface impoundment. While IPL did not provide the capacity of the Coal Pile Runoff Pond in its Demonstration, IPL did state that it is not large enough to handle to the facility's non-CCR wastestreams.[10] To clarify, the Coal Pile Runoff Pond is 0.95 acres in size, with a total volume of 2,117,000 gallons. The pond must be able to capture and treat the 10-year, 24-hour rainfall event per 40 CFR 423.12(b)(9) and (10), which equates to 2,097,000 gallons based on the contributing drainage area of the site. This is 99% of the existing capacity of the Coal Pile Runoff Pond. Consequently, there is not adequate storage/treatment capacity in the existing Coal Pile Runoff Pond to manage any other non-CCR wastestreams.

In addition, Coal Pile Runoff has specific Best Practicable Control Technology Currently Available (BPT) limits under the Effluent Limitation Guideline (ELG) regulations and combining any other wastestreams in the Coal Pile Runoff Pond prior to meeting those limits would be in

[6] Alliant Energy met with EPA via conference call on October 22, October 27, November 13, and November 16 to discuss a wide range of issues pertaining to the alternative closure requirements of §257.103, the contents of the Demonstration, and overall compliance with the CCR Rule.
[7] See 85 Fed Reg 53541.
[8] Proposed Decision at 18-21.
[9] Proposed Decision at 19.
[10] Demonstration at 2-6.

violation of the ELG regulations. Rerouting additional wastestreams to the Coal Pile Runoff Pond also would significantly reduce the residence time in this small impoundment and put IPL at risk of violating its discharge limits for total suspended solids. Thus, the Coal Pile Runoff Pond is not an appropriate receptor of non-CCR wastestreams under federal rules and the existing NPDES discharge permit.

EPA implies that IPL should have evaluated whether the Coal Pile Runoff Pond could be expanded to accommodate these wastestreams. As described in Section 2.1.3 of the Demonstration, there is not sufficient space onsite to construct a new impoundment. These limitations, as outlined in Figure 2 of Appendix A to the Demonstration, also apply to expansion of the Coal Pile Runoff Pond. Even if there were adequate adjacent property to expand the Coal Pile Runoff Pond, this expansion would require additional design, procurement, and construction activities that would have resulted in a project schedule no shorter than the expected duration of the remaining workplan for diverting non-CCR wastestreams to the new LVWTP.

2. Cooling Tower Blowdown

EPA stated that IPL did not demonstrate why it was technically infeasible to provide alternative on-site capacity for Cooling Tower Blowdown prior to April 11, 2021.[11] IPL explained in the Demonstration that it expected to receive the NDPES permit modification in Spring of 2022 but did not expect to have the Cooling Tower Blowdown installation completed until October of 2022. At the time the Demonstration was submitted, this was the best estimate IPL could provide.

IPL offers the following clarification regarding the management of Cooling Tower Blowdown at OGS and how it is viewed within the existing NPDES permit. Cooling Tower Blowdown has been and continues to be directed to a surge tank located within the plant. Prior to conveyance into the tank, Cooling Tower Blowdown is sampled in accordance with federal ELGs. The water in this tank is used as an input to the dry scrubber system to reduce the amount of water that is withdrawn from the Des Moines River. If flows to the surge tank exceed the water demand requirements of the scrubber, the surge tank is designed to overflow into the plant drains system. The plant drains convey the excess surge tank water and other non-CCR flows to the OGS Ash Pond. Under the existing NPDES permit, all plant drain water, including water that originated from the Cooling Tower Blowdown, are considered low volume wastewater once within the plant drains system (as addressed in the following section). In other words, all of the water that is currently conveyed to the OGS Ash Pond via the plant drains is considered low volume wastewater.

As described in the Demonstration, IPL has constructed a new line to convey Cooling Tower Blowdown around the new LVWTP to the new outfall if needed. This line is unrelated to ceasing placement of non-CCR wastewater in the OGS Ash Pond via the plant drains. As discussed further below, this clarification and other project efficiencies will mean that final placement of non-CCR wastewater in the OGS Ash Pond is expected earlier than initially requested in the Demonstration. Final tie-ins to redirect the plant drain system to the new LVWTP are anticipated to be completed by May 1, 2022.

3. Temporary Storage of Small Non-CCR wastestreams

[11] Proposed Decision at 19-20.

In its proposed determination, EPA states that "IPL did not consider whether there is enough available footprint on-site to implement a temporary storage solution for one or more of the other, smaller OGS wastestreams. OGS produces four non-CCR wastestreams that are small (of generation rates of 2,600 gal/day or less). These are the ultrafilter backwash[12], condensate polisher wastewater, miscellaneous plant drains, and on-site sewage treatment."[13]

It should be noted that there is no existing infrastructure to convey these wastestreams, which are combined within the plant drains system (except sewage treatment effluent), into a storage system. Even if a conveyance solution existed, this type of modification would require a wastewater construction permit issued by the IDNR. Justification for such a permit modification would be difficult to make for such a temporary solution when a permanent option has already been proposed, is under construction, and an existing treatment option (the OGS Ash Pond) exists with a permitted outfall. Even if a storage system were feasible, IPL estimated that these four small wastestreams would require approximately eight frac tanks *per day*[14]. As described in Section 2.1.3 of the Demonstration, there is not sufficient space onsite to construct a new impoundment, and the same holds true for the hundreds of frac tanks that would have been required to hold non-CCR flows between November 2020 and the requested site-specific deadline.

While temporary tanks and onsite storage might be considered as part of a solution to capture flows for offsite disposal; they can only be used for onsite disposal if they are included in a permit modification and approved by the permitting agency. At this point, implementing tanks for storage of these small wastestreams at OGS would require permitting that extends beyond the planned date when discharges to the OGS Ash Pond will end. Furthermore, EPA should consider that temporary onsite storage is not disposal capacity. Mobilizing frac tanks to capture wastestreams simply delays discharge to a more permanent solution and creates operational challenges and spill risk in the process.

4. CCR Landfill Leachate

EPA observes in the Proposed Decision that the Demonstration does not include a discussion of combustion residual landfill leachate generated at OML[15]. The Demonstration focused on non-CCR wastestreams generated at OGS. At the time of submittal of the Demonstration, leachate generated at OML was hauled via truck to OGS, where it was discharged to the OGS Ash Pond as allowed by the facility's NPDES Permit. IPL has initiated off-site alternative capacity for this non-CCR wastestream. In March 2022, OGS received a draft permit from the City of Ottumwa Water Pollution Control Facility (WPCF) and initiated baseline monitoring of CCR leachate. The baseline monitoring period is expected to end by May 1, 2022. At the conclusion of baseline monitoring, IPL anticipates receiving permission to haul OML leachate to the Ottumwa WPCF and will permanently discontinue discharges of OML leachate into the OGS Ash Pond.

In any case, a finding that IPL failed to adequately demonstrate that there was no available on- or off-site capacity for the CCR landfill leachate should not preclude an approval of an extension for

[12] EPA proposed to determine there is no existing alternative on-site capacity for ultrafilter backwash. Proposed Decision at 18.
[13] Proposed Decision at 20.
[14] Proposed Decision at 20.
[15] Proposed Decision at 14.

the other wastestreams addressed in the Demonstration. The Part A rule fully contemplates that EPA can approve and/or deny extensions for specific individual wastestreams, rather than denying an application in full. *See* 85 Fed Reg 53541.

D. It is not technically feasible to dispose of non-CCR wastestreams off-site.

EPA has proposed that IPL has not adequately demonstrated that there is no off-site capacity available for five of its non-CCR wastestreams. One of these wastestreams is landfill leachate generated at the OML facility and trucked to the site, which is discussed above. The remaining four wastestreams are ultrafilter backwash, condensate polisher wastewater, miscellaneous plant drains, and on-site sewage treatment wastewaters. In support of its conclusions, EPA proposes that it considers it reasonable for a facility to divert a wastestream using ten or fewer trucks per day[16]; however, the four flows that EPA suggested IPL should haul offsite would require 16 trucks per day, in combination.

It is not feasible to send these four wastestreams off-site because there is no infrastructure in place which would allow these individual streams to be sent to tanks or loaded onto trucks. The four wastestreams are combined with each of the other flows listed on page 2-5 of the Demonstration into a single 42" underground gravity-drained pipeline to the OGS Ash Pond. Segregating these streams and treating them individually would require tanks, sumps, pumps, associated power supplies, and piping that does not exist at OGS. The additional design, permitting, procurement effort to separate these flows and install an above-ground option for storage or hauling would not be the fastest technically feasible method of ending discharges to the OGS Ash Pond. Furthermore, the combined wastestreams in this single pipe would require approximately 120-398 trucks per day[17] to haul these wastestreams offsite, depending on rainfall and dry scrubber water demand (see prior discussion of Cooling Tower Blowdown reuse). The number of trucks required to manage the flow from the single pipeline used to convey these combined flows exceeds EPA's proposed reasonableness threshold of 10 trucks per day and is therefore not feasible.

In any case, EPA has provided no basis for asserting that utilizing 10 trucks per day is a feasible option. In fact, the amount of additional truck traffic that can be accommodated without disrupting operations or introducing safety concerns is a site-specific issue. For example, OGS has a single primary ingress/egress point that is controlled to maintain the security of the site and the road leading to the site is a rural two-lane highway with a history of safety concerns where it connects to a nearby U.S. highway. For these reasons, IPL is sensitive to the amount of truck traffic generated by the site and works to reduce it wherever possible to avoid disruptive and unsafe congestion at the access gate and to improve traffic safety in the vicinity of OGS.

E. Analysis of Adverse Impacts to Plant Operations

EPA proposes to find that there would be adverse impacts to operations at OGS if the OGS Ash Pond could not be used after April 11, 2021 but proposes to disagree that there would be broader

[16] Proposed Decision at 22.

[17] Page 2-5 of Demonstration, including approximately 120 trucks per day for clarifier sludge (13), ultrafilter backwash (4), gravity filter backwash (18), reverse osmosis reject (22), condensate polisher wastewater (1), boiler blowdown (25), miscellaneous oily plant drains (26), miscellaneous plant drains (10), onsite sewage treatment wastestreams (1), with surges to account for Cooling Tower Blowdown (86) and site stormwater (192).

impacts to the grid.[18] IPL agrees with EPA's Proposed Decision relating to adverse plant impacts and agrees that the Demonstration clearly showed that such impacts would occur. However, IPL does not believe that EPA has provided a reasoned basis for its proposed conclusion that there would not be broader impacts to the power grid if OGS could not operate, and in any event IPL does not believe that the rule requires a showing of such broader impacts to obtain an extension.

To obtain a Part A extension, the rule requires a facility to provide analysis of the adverse impacts that would occur to plant operations if the CCR surface impoundment in question were no longer available. 40 C.F.R. § 257.103(f)(1)(iv)(A)(1)(ii). In its Demonstration, IPL provided information showing that use of the OGS Ash Pond is critical to OGS operations and that without the OGS Ash Pond, the plant could not continue to operate because there would be no place to manage the non-CCR wastestreams generated during operations. Thus, IPL clearly met the rule requirement in § 257.103(f)(1)(iv)(A)(1)(ii). This is also why IPL will be completing the remaining tie-in work during the planned outage this spring, thus working through the MISO protocols to finish the work as quickly as possible.

While IPL further noted in its Demonstration that a suspension of operations at OGS could have broader adverse impacts on the power grid, it did not provide a detailed analysis of such impacts because such analysis is not required under the rule to obtain an extension. Thus, EPA's proposed finding related to broader impacts simply is not a necessary element of approving the Demonstration. Moreover, EPA's proposed assertion that there would not be broader impacts is not supported. As explained in Section V below, EPA's assumption that the MISO system has excess reliability due to excess reserve margin is flawed because the current resource adequacy construct assesses only summer peak reserve margin.

III. Site-Specific Analysis of Alternative Capacity Selected

EPA has proposed to find that IPL has justified its chosen approach to develop alternative capacity.[19] IPL supports EPA's analysis, as the Demonstration provided a detailed discussion on why the method chosen is the fastest technically feasible alternative. However, EPA also has proposed to find that IPL did not adequately justify the timeframe needed to develop alternative capacity. Rather, EPA proposes to conclude that the work could have been done faster.

IPL contends that it provided sufficient justification for its timeframes in the Demonstration based upon site-specific information and the estimated project schedule. IPL provided a detailed project schedule (Appendix B of the Demonstration) based on the best available information it had in November 2020. Note that many of the durations reflected in the schedule are subject to the means and methods of the contractor, which had not yet been selected at the time the Demonstration was submitted. Thus, the project schedule was developed based on reasonable estimates determined by Qualified Professional Engineers (QPE). IPL contends that EPA is not in the position to produce a more-informed schedule that either extends or accelerates the anticipated duration of the project without the benefit of being intimately familiar with the facility or the project requirements.

[18] Proposed Decision at 25.
[19] Proposed Decision at 28.

Further, EPA stated that a contractor was not scheduled to perform any duties in between the award of the contract and mobilization of the site.[20] EPA appears to have misunderstood the role of the contractors as they prepare to commence activity at a job site. Contractors typically require a period of pre-mobilization time to plan their work, order materials, and schedule arrival of construction equipment and personnel. Many construction bids include necessary mobilization periods that vary by the contractor's current workloads, team member availability, and intricacies of the project at hand. While these activities may not be explicitly included in the Demonstration, they are generally understood and could not be accurately predicted at the time of submittal in November 2020.

IPL collaborated with the contractor to identify efficiencies and safely accelerate the work where possible, including:

- Dewatering of the ZLD Pond prior to full mobilization.
- Proceeding with work where permits were not required, concurrent with work that required permitting. This allowed earlier construction of the new outfall structure, and the LVWTP.
- Removing CCR concurrently with LVWTP liner subgrade/berm preparation and construction.
- Expediting submittal reviews to allow for early procurement of geosynthetics and HDPE liner. This mitigated production and delivery delays caused by the shutdown of petroleum plants due to Winter Storm Uri.

As noted above, IPL's work is ahead of schedule and IPL now anticipates the OGS Ash Pond will permanently cease receipt of non-CCR wastestreams by May 1, 2022. The overall schedule submitted to EPA was accurate and sufficient, and IPL's commitment to compliance has resulted in further acceleration of the work.

IV. OGS is in Compliance with the CCR Rule.

EPA is proposing to find that the OGS facility is not in compliance with a number of CCR Rule provisions. IPL addresses each of the individual provisions identified by EPA below.

A. EPA's scope of review is limited to current compliance.

EPA has proposed to find the OGS facility in noncompliance due to its failure to demonstrate that it "will be" in compliance in the future.[21] But this finding of *future* noncompliance is beyond EPA's scope of review under the Part A rule.

To qualify for an extension under section 257.103(f)(1), a facility must (1) demonstrate that there is no available capacity on or off-site; (2) demonstrate that it was technically infeasible to develop alternative capacity by April 11, 2021; and (3) be in compliance with the CCR Rule. Thus, the regulatory text simply requires that a facility be "in compliance." EPA explained in the preamble to the Part A rule that this requirement was to ensure a facility's *current* compliance status, not its

[20] Proposed Decision at 31.
[21] Proposed Decision at 43.

compliance status in the future.[22] Yet, EPA has proposed to find that IPL is currently not in compliance because it has not demonstrated it "will be" in compliance based on future actions.

OGS was not required, as a condition of qualifying for a successful Part A extension request, to describe its closure process in the Demonstration or demonstrate that it will maintain compliance *in the future*. EPA seems to be incorrectly conflating the requirement to demonstrate current compliance to obtain an extension with the requirement that the facility maintain compliance *after* receiving an extension *in order to maintain the extension*. *See* 40 C.F.R. § 257.103(f)(1)(viii) ("failure to remain in compliance with any of the requirements of this subpart will result in the automatic loss of authorization under this section"). A facility cannot be in noncompliance with the CCR Rule based on actions it has yet to take or requirements not currently applicable. Therefore, EPA simply cannot find noncompliance with requirements that are not yet applicable based on a facility's future plans or other events that have not happened.

This error in EPA's analysis is illustrated in EPA's proposed finding that IPL "has not demonstrated compliance with the performance standards applicable to the closure of the OGS Ash Pond 40 C.F.R. § 257.102(d)(1) and (2)."[23] But nothing in section 257.103(f)(1) requires a demonstration that the facility's future closure will be in compliance with the closure performance standards. That provision speaks only in the present tense. Nor would it even be possible for a facility to demonstrate future compliance with an obligation that is years in the future and subject to future assessments and changing conditions. A facility cannot be "in" or "out" of compliance with an obligation that is not yet applicable.

B. EPA has misinterpreted the closure-in-place performance standards and applied them in a procedurally flawed manner.

EPA's proposed finding that OGS is in non-compliance because it has failed to demonstrate how it will meet the closure-in-place performance standards is based on a fundamental misreading of the rule's closure performance standards at 40 C.F.R. § 257.102(d). As discussed below, EPA misreads how the term "infiltration" should be interpreted in 257.102(d)(1)(i), and how the technical standard for "eliminating free liquids through the removal of liquid wastes" or solidification of remaining wastes must be achieved in § 257.102(d)(2)(i). Therefore, its proposed finding that the facility's closure plan does not adequately explain how these standards will be met cannot be the basis for denying the facility's Part A submission.

1. The Closure-In-Place Performance Standards are Separate from the Rule's Corrective Action Requirements

In EPA's press release announcing the release of its Part A Proposed Decisions, the Agency explains that it is restating "EPA's consistently held position that surface impoundments or landfills cannot be closed with coal ash in contact with groundwater," and notes that "[l]imiting the contact between coal ash and groundwater after closure is critical to minimizing releases of contaminants into the environment and will help ensure communities near these facilities have access to safe water for drinking and recreation."[24] Apart from the fact that the Agency has *never*

[22] 85 Fed. Reg. at 53553.
[23] Proposed Decision at 40, 43.
[24] https://www.epa.gov/newsreleases/epa-takes-key-steps-protect-groundwater-coal-ash-contamination

articulated this position previously—a fact discussed in more detail below—EPA is conflating the distinct closure design provisions with the rule's separate groundwater corrective action requirements.

The rule's closure-in-place performance standards are not designed to remediate groundwater contamination, but rather prescribe the methods for addressing the end of the useful life of a CCR unit. After closure-in-place is complete, the obligation to undertake corrective action to address any groundwater contamination continues during the post-closure periods. This is directly in contrast to the closure-by-removal provisions, where there is no obligation to conduct post-closure groundwater monitoring because groundwater is addressed during the closure process. This structure was established based on EPA's finding that RCRA's Subtitle D standard was met through closure-in-place coupled with at least 30 years of post-closure groundwater monitoring and corrective action.

Viewing the rule's closure-in-place provisions in the proper context, including their distinct role in the broader CCR regulatory program, illuminates this structure. The CCR Rule's closure-in-place option directs that, as part of draining and stabilizing CCR in a surface impoundment prior to installation of the cover system, "[f]ree liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues." *Id*. at 257.102(d)(2)(i). This requirement, which is modeled after EPA's interim status hazardous waste closure standards,[25] appears in the CCR Rule exclusively in the context of closing a CCR unit in place for purposes of supporting the unit's final cover system. "Free liquids" are to be removed prior to closure to ensure the waste is in a more stable form suitable for construction of the final cover system. Hence the subheading in § 257.102(d)(2), "Drainage and stabilization of CCR surface impoundments." Removing free-flowing liquid from an impoundment is undertaken to allow for grading and compaction to provide a more stable base for the construction of the final cover system, not to address groundwater contamination.

Similarly, the requirement to minimize, control, or eliminate to the maximum extent feasible "post closure infiltration" is directly pointed at the adequacy of the unit's cover system and its effectiveness in preventing liquids from infiltrating through the cover and causing contaminants to leach from the unit after closure. In fact, the written closure plan for impoundments closing-in-place requires a "description of the final cover system" and "*how the final cover system will achieve the performance standards specified in paragraph (d)*." 40 C.F.R. § 257.102(b)(1)(iii) (emphasis added). The performance standards in "paragraph (d)" include the requirement to minimize, control or eliminate to the maximum extent feasible the post-closure infiltration of liquid into the waste.

Interpreting section 257.102(d) to address groundwater upends the CCR Rule's structure by supplanting the step-wise decision-making process in the rule's corrective action process—which itself includes source control measures—with the rule's closure provisions. But the rule's closure provisions are not intended to substitute for the corrective action process, which requires owners and operators to, among other things, assess the most feasible and effective corrective measures related to groundwater contamination; determine what measures meet the rule's strict standards; evaluate the long- and short-term effectiveness and protectiveness of various remedies; and consider the risks that might be posed to the community and the environment during

[25] *See* 85 Fed. Reg. at 21409.

implementation of a particular remedy, including potential threats associated with excavation, transportation, and re-disposal of the CCR. These are the steps to determine how best to implement corrective action on a site-specific basis. A facility may determine that source removal is a necessary component of corrective action, but that is the role of the rule's corrective action provisions, not the separate closure provisions. Instead, the closure-in-place performance standards establish requirements for the end of the useful life of the unit that are intended to prevent further downward infiltration into the unit.

The Agency's record is clear on this point and devoid of any suggestion that CCR units cannot be closed in contact with groundwater. For example, in discussion of the two closure options, EPA stated:

> EPA did not propose to require clean closure *nor to establish restrictions on the situations in which clean closure would be appropriate*. As EPA acknowledged in the proposal, most facilities will likely *not* clean close their CCR units given the expense and difficulty of such an operation.[26]

Furthermore, EPA has never proposed to require closure by removal in any specific circumstances, nor considered such requirements as part of the risk assessment or the regulatory impact assessment (which presumed surface impoundments would be closed in place). EPA's assertion that it has consistently held the position that surface impoundments or landfills cannot be closed with coal ash in contact with groundwater is in conflict with the regulatory history, and thus the public clearly was not adequately informed that this position was ever proposed or finalized.

EPA cannot now, in the context of reviewing a Part A submission, apply different closure requirements based on new policy positions of the Agency. To do so would require a new rulemaking, based on a new risk assessment and new regulatory impact analysis.

2. EPA's Interpretation of the Phrase "Free Liquids" is Inconsistent with the Regulatory Text and the Limits of RCRA Jurisdiction.

As part of draining and stabilizing CCR in a surface impoundment prior to installation of the cap system, the regulation provides, in pertinent part, that "[f]ree liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues." In its proposed decision, EPA reads this performance standard as applying to "the freestanding liquid in the impoundment and to all separable porewater in the impoundment, whether the porewater was derived from sluiced water or *groundwater that intersects the impoundment*."[27] The Agency explains that the "definition of free liquids in 40 C.F.R. § 257.53 encompasses all 'liquids that readily separate from the solid portion of a waste under ambient temperature and pressure,' regardless of whether the source of the liquids is from sluiced water *or groundwater*."[28]

This interpretation improperly expands the plain meaning of the regulatory text. EPA reads the regulatory text as if it requires that "free liquids must be eliminated" and nothing more. But the

[26] 80 Fed. Reg. at 21412
[27] *Id.* at 41-42 (emphasis added).
[28] *Id*. (emphasis added).

rule actually requires that "free liquids must be eliminated *by removing liquid wastes*" (or, as an alternative, by "solidifying the remaining wastes and waste residues")[29]. So, to eliminate free liquids, one must either remove "liquid wastes" or solidify "remaining wastes." The standard does not require removal of groundwater. Thus, given this context, "free liquids" is referring only to liquid wastes that remain or separate from solid wastes and not groundwater, which is not a solid waste.

EPA has repeatedly made clear that groundwater (and for that matter, any environmental medium containing contaminants) is not a solid waste.[30] Because groundwater, even that which is contaminated, is an environmental medium, it is not a solid waste. Therefore, the obligation in § 257.102(d)(2)(i) to "eliminate free liquids" through the removal of "liquid wastes" or "solidifying of remaining wastes" cannot extend to groundwater.

Other tribunals that have looked at this precise question agree. For example, in construing the federal CCR Rule as applied to an Indiana power company, an environmental law judge (ELJ) found that groundwater is not a solid waste and that the term "free liquid" is well understood under RCRA *not* to encompass groundwater. The ELJ explained that "groundwater, and for that matter, any environmental medium containing contaminants, is not a solid waste in the first place. Therefore, because groundwater is not a solid waste, it is axiomatic that groundwater does not, and cannot, constitute a "free liquid" under RCRA."[31] The ELJ decision underscores that the plain language of the term "free liquids," as is defined in the CCR Rule and has been applied consistently throughout RCRA's history, does not include groundwater.

EPA's position also conflicts with its historical interpretation of the same requirement under the Subtitle C hazardous waste program. The Subtitle D regulations, including the CCR Rule, cannot be implemented in a manner more stringently than its Subtitle C hazardous waste regulations. *See City of Chicago v. Environmental Defense Fund*, 511 U.S. 328, 331 (1994).

EPA's Subtitle C regulations for the closure-in-place of hazardous waste impoundments contain the *identical* requirement as set forth in the CCR Rule with respect to the elimination of free liquids. *Compare* 40 C.F.R. § 265.228(a)(2)(i) *with* 40 C.F.R. §257.102(d)(2)(i).[32] Tellingly, EPA has not interpreted that requirement in the Subtitle C context as requiring the removal of intersecting groundwater under this requirement. Like the CCR regulatory program, units closing-in-place under RCRA's Subtitle C program must address groundwater contamination through RCRA's post-closure care and corrective action provisions, not through the closure-in-place standard designed to support a unit's cover system.

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[29] 40 CFR 257.102(d)(2)(i).

[30] 63 Fed. Reg. 28,556, 28,621 (May 26, 1998) (contaminated media is not waste); see also Letter from Michael Shapiro, Director, EPA Office of Solid Waste, to Peter C. Wright, Monsanto Company (Sept. 15, 1995) (explaining "contaminated media are not considered solid wastes"); Letter from Sylvia K. Lowrance, Director, EPA Office of Solid Waste, to John E. Ely, Enforcement Director, Virginia Department of Waste Management (Mar. 26, 1991) (environmental media are not solid wastes)

[31] *In the Matter of Objection to the Issuance of Partial Approval of Closure/Post Closure Plan Duke Gallagher Generating Station Ash Pond System*, No. 20-S-J-5096, at 14 ¶¶ 30, 32–35 (Ind. Office of Environmental Adjudication, May 4, 2021).

[32] When describing the requirements for closure-in-place, the first condition, as set forth in 40 C.F.R. § 264.228(a)(2)(i), provides: "Eliminating free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues."

This point is further confirmed in EPA technical guidance regarding the methods for closing hazardous waste surface impoundments and meeting the Subtitle C hazardous closure performance standards. In discussing circumstances where it may be more advantageous to pursue the closure-by-removal option, EPA references impoundments "*where free liquids cannot be removed to yield consolidated wastes of sufficient density to support the cover and associated construction vehicles*."[33] This passage underscores that the purpose of removing free liquids is to support the cover systems for units closing with wastes in place, not to address groundwater.

Accordingly, what the performance standard under § 257.102(d)(2)(i) requires is that, prior to installing the final cover system, owners and operators remove the liquid waste from the unit *or* solidify the wastes that remain in the unit as necessary to support the final cover system. To the extent contaminants remain in the groundwater, such contaminants are to be addressed under the CCR Rule's separate post-closure groundwater monitoring and, if necessary, corrective action provisions, not as a condition of closure. EPA's position that the obligation to eliminate free liquids through the removal of liquid wastes includes all separable porewater attributable to groundwater intersecting the base of the CCR unit is at odds with the plain language of the regulatory text and inconsistent with how other programs under RCRA have been historically implemented. Moreover, even if groundwater could be considered a "free liquid," nothing in the rule requires the removal of *all* free liquids prior to closure, but only those free liquids that can be removed by either (1) removing liquid wastes; or (2) solidifying the remaining waste and waste residues.[34] Therefore, this position cannot be the basis for asserting the facilities are out of compliance with the CCR Rule.

3. EPA Misinterprets the Term "Infiltration" as Applying to Horizontal Groundwater Flow

40 C.F.R. § 257.102(d)(1)(i) directs that the owner or operator closing an impoundment under this closure option must "[c]ontrol, minimize or eliminate to the maximum extent feasible, post-closure *infiltration* of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface or to the atmosphere" (emphasis added). EPA reads the term "infiltration" as encompassing "any liquid passing into or through the CCR unit by filtering or permeating from any direction, including the top, sides, and bottom of the unit."[35] This means, according to EPA, that "[i]n situations where the groundwater intersects the CCR unit, water may infiltrate into the unit from the sides and/or bottom of the unit because the base of the unit is below the water table."[36] Under this interpretation, therefore, steps must be taken to control, minimize, or eliminate post-closure infiltration of groundwater into the base of a CCR unit to meet the closure-in-place performance standard.

In its proposed decision, EPA does not point to anything in the regulatory text that supports this interpretation; nor is there any. Instead, EPA claims only that its interpretation is consistent with the plain meaning of the term infiltration, citing the dictionary definition of the term in Merriam-Webster to mean "'to pass into or through (a substance) by filtering or permeating' or 'to cause

[33] *See* EPA Office of Solid Waste, "Closure of Hazardous Waste Surface Impoundments," (SW000873 (Sept. 1982) at 9) (emphasis added).
[34] Compare, e.g., 257.102(d)(2) (requiring elimination of "free liquids") with 257.102(k)(1)(i) (requiring "remov[al] of *all* CCR") (emphasis added).
[35] Proposed Decision at 42.
[36] *Id.*

(something, such as a liquid) to permeate something by penetrating its pores or interstices.'"[37] Not only is EPA's reliance on the definition of "infiltration" misplaced, EPA's position is at odds with the plain language of the CCR Rule and EPA's preamble pronouncement regarding how the closure-in-place performance standard in 40 C.F.R. § 257.102(d)(1)(i) is to be met.

i. EPA's Sole Reliance on General Dictionary Language is Flawed

EPA points to nothing in the regulatory text, the preamble to the CCR Rule or to any source other than the general definition of "infiltration" in the Merriam-Webster dictionary for its interpretation of the term "infiltration" in § 257.102(d)(1)(i). Putting aside that EPA's reference to a general dictionary definition of infiltration cannot overcome the plain meaning of EPA's regulatory text or supporting preamble discussion, the Agency's selective reference to general usage definitions from Merriam-Websters dictionary is flawed.

First, other common usage dictionaries contain several different definitions of "infiltrate" that conflict with EPA's interpretation. For example, the Cambridge Academic Content Dictionary defines "infiltrate" in the scientific context to mean "(of water) to flow slowly down into the earth from the earth's surface, for example, through cracks in rocks,"[38] Because it is possible to simply pick one dictionary definition over another – as EPA has done here – the Supreme Court has admonished against such cherry picking among dictionary definitions, explaining that "a word is known by the company it keeps" . . . . and that "[t]o choose between [the] competing definitions, [the Court should] look to the context in which the words appear." *McDonnell v. United States* , —– U.S. ——–, 136 S. Ct. 2,355, 2,368, 195 L.Ed.2d 639 (2016). Consistent with this admonition, the D.C. Circuit has specifically cautioned against EPA's approach here of relying on a general dictionary meaning of a technical term in isolation from the regulatory context, especially where reference to technical sources more accurately reflect the context in which the term is used:

> General-usage dictionaries cannot invariably control our consideration of statutory language, especially when the "dictionary definition of isolated words[ ] does not account for the governing statutory context." . . . After all, "[t]he plainness or ambiguity of statutory language is determined [not only] by reference to the language itself, [but as well by] the specific context in which that language is used, and the broader context of the statute as a whole." . . . *Though our assessment of the ambiguity of statutory text sometimes begins and ends with the definitions provided in contemporary general-usage dictionaries, on other occasions it is useful and important to consult more technical sources where, as here, the statute focuses on a specific technical context.*

Am. Coal Co. v. Fed. Mine Safety & Health Review Comm'n, 796 F.3d 18, 25-26 (D.C. 2015) (emphasis added) (internal citations omitted).

As EPA emphasized in promulgating the CCR Rule, it "re-evaluated the performance standards throughout the final rule to ensure that the requirements are sufficiently objective and *technically*

[37] *Id.*
[38] Cambridge Academic Content Dictionary, https://dictionary.cambridge.org/us/dictionary/english/infiltrate.

precise that a qualified professional engineer will be able to certify that they have been met." 80 Fed. Reg. at 21,337 (emphasis added). The term "infiltration" therefore should be interpreted by reference to technical sources that QPEs, who are delegated under the rule to certify compliance with the standard, would rely on in interpreting the term and whose professional licenses turn on an objective evaluation and certification of facility compliance. Even a cursory glance at several relevant technical sources relied on by the professional engineer community makes clear that EPA's reliance on Merriam-Webster general-usage dictionary is precisely what the Supreme Court counseled against.

When evaluating the potential for "infiltration" under the closure-in-place performance standard, QPEs naturally consider how the term has been applied and implemented throughout the history of the RCRA groundwater program, including in particular the risk assessment models used to develop the performance standards in the CCR Rule. Chief among these is EPA's Composite Model for Leachate Migration with Transformation Products (EPACMTP). This model formed the basis of EPA's 2010 and updated 2014 CCR Risk Assessment underlying the rule. In the EPACMTP background technical documents, the concept of "infiltration" is consistently described as the phenomenon of water percolating through a cover system into the soil.

For example, in defining the "Landfill Infiltration Rate," EPA's technical document explains that "[t]he landfill infiltration rate (m/yr) is defined as the rate at which water/leachate percolates through the landfill to the underlying soil. The landfill infiltration rate may be different from the ambient regional recharge rate due to the engineering design of the landfill (*e.g.*, landfill cover soil that has a lower conductivity than the regional soils), topography, land use, and vegetation."[39] Importantly, EPA emphasizes that infiltration rate is defined by water or leachate percolating *through* the landfill *into* the underlying soil (emphasis on point of generation and point of termination) and that this rate is influenced by landfill cover soils, regional soils, land use, and vegetation. These are critical elements that a QPE would use to quantify minimization from infiltration with specific design/construction and local soils. Importantly, groundwater flow is not an element here.

Elsewhere, EPA explains that "[t]he infiltration rate is defined as the rate at which leachate flows from the bottom of the waste management unit (WMU) (including any liner) into the unsaturated zone beneath the WMU."[40] Again, the concept of infiltration is the vertical flow of liquids from the WMU *into* the unsaturated zone beneath the WMU.

This concept of infiltration, as understood and applied by the professional community, is consistent with EPA's understanding and application of this term through the history of the RCRA groundwater program. EPA guidance regarding methods for meeting the performance standards for closing hazardous waste surface impoundments (which EPA acknowledges the CCR closure performance standards are modeled after) refers to the concept of "infiltration" under the closure standards as follows:

> *Infiltration represents the primary mechanism for the downward migration of waste-derived constituents.* Four processes are involved: (l) entry through the cover soil (or residual waste strata, if no cover is present), (2) storage within the soil, (3)

[39] Page 4-7, Section 4.3.1 (Page 7 of PDF).
[40] Page 4-1 (Page 1 of PDF), 3rd paragraph.

transmission through the soil, and (4) deep drainage through the residual waste strata and into the underlying soil. *A factor limiting any one of these processes (i.e., an impermeable soil cover) can significantly reduce the net volume of vertical flow.*[41]

To illustrate this point, EPA depicts the concept of "infiltration" as the vertical flow of liquids through the cover system:

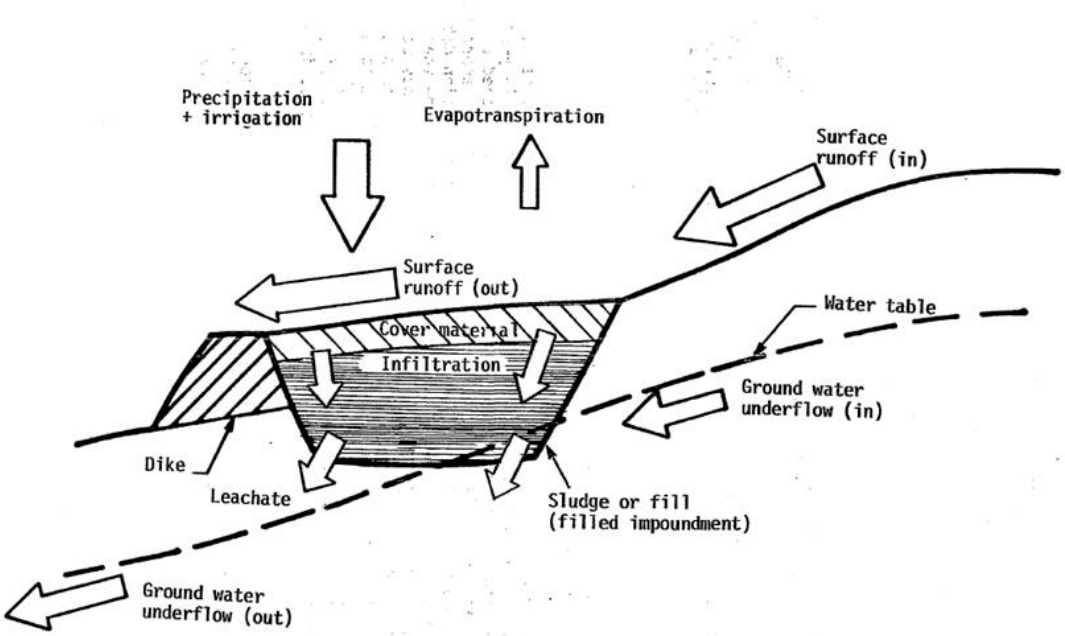

Figure 3-1. Simplified Water Balance for Filled Surface Impoundment

This illustration identifies the "seven principal input and output components of a hypothetical closed surface impoundment," including: (1) precipitation, (2) surface runoff onto the impoundment, (3) surface runoff from the impoundment area, (4) evapotranspiration, (5) ground water underflow in, (6) ground water underflow out, and (7) infiltration or seepage. Notably, the Agency specifically distinguishes between groundwater underflow (which is horizontal) and infiltration (which is vertical).[42] (Notably, as related to the free liquids discussion above, this illustration also shows a hypothetical closed surface impoundment where groundwater remains in a portion of the unit, thus showing that "free liquids" does not include groundwater.)

Further, EPA's general website on "Infiltration Models"[43] describes the "phenomena of water infiltration in the unsaturated zone" as follows:

[41] *See* EPA Office of Solid Waste, "Closure of Hazardous Waste Surface Impoundments," (SW000873 (Sept. 1982) at 26.
[42] *Id.* at 24.
[43] https://www.epa.gov/water-research/infiltration-models

> Water applied to the soil surface through rainfall and irrigation events subsequently enters the soil through the process of infiltration. . . . Infiltrability is a term generally used in the disciplines of soil physics and hydrology to define the maximum rate at which rain or irrigation water can be absorbed by a soil under a given condition. Indirectly, infiltrability determines how much of the water will flow over the ground surface (*i.e.*, runoff or overland flow), terminating in lakes, streams, or rivers, and how much will enter the soil.

EPA's infiltration website also specifically references the technical work of Daniel Hillel, who has been credited with coining the term "infiltrability." Mr. Hillel uses this term "to designate the infiltration flux resulting when water at *atmospheric pressure* is made *freely available* at the soil surface." Daniel Hillel, Introduction to Soil Physics (1982) at 212 (emphasis in original).

While there are certainly other relevant technical documents that correctly define "infiltration" in the context of RCRA's groundwater monitoring programs consistent with the above, it also worth referencing the definition provided to this term by the U.S. Geological Survey (USGS), the leading federal agency with expertise in geology. The USGS, provides a definition of "infiltration" as "flow of water from the land surface into the subsurface."[44]Also, according to the USGS: "Water that infiltrates at land surface moves vertically downward to the water table to become ground water. The ground water then moves both vertically and laterally within the ground-water system."[45]

The above discussion underscores the point that EPA's sole reliance on the Merriam-Webster definition of "infiltration" is legally flawed, as it does not reflect the technical definition of the term as defined by the Agency itself in the context of RCRA groundwater monitoring programs and as appropriately understood and applied by QPEs in assessing compliance under the CCR Rule.

ii. EPA's Interpretation is Inconsistent with the Regulatory Text and EPA's Prior Preamble Statements.

As noted above, when interpreting the term "infiltration," one must look to the context of the particular provision as well as the regulation as a whole. Here, there is nothing in the regulatory text to support EPA's position that the term "infiltration" in the performance standard at 40 C.F.R. § 257.102(d)(1)(i) extends to liquids entering the unit from any direction, let alone to groundwater traversing horizontally through CCR at the base of the unit undergoing closure. To the contrary, the applicable regulatory text makes clear that this performance standard is speaking to the performance of the final cover system—which is the central feature of the closure-in-place option (*see id*. at § 257.102(d)(3))—and its effectiveness in preventing liquids from infiltrating the cover and causing CCR contained in the closed unit from being released or leaching to the ground, surface waters or the atmosphere.

That the closure-in-place performance standard in 40 C.F.R. § 257.102(d)(i) is addressing the prevention of liquid infiltration through the unit's cover system—as opposed to the horizontal

[44] *Infiltration,* USGS Dictionary of Water Terms, (last visited Sept. 21, 2020).
[45] Thomas C. Winter et al., Ground Water and Surface Water: A Single Resource, USGS Survey Circular 1139, at 7 (1999).

movement of groundwater through the base of the unit—is confirmed by the regulatory text detailing how this performance standard is to be met. First, the written closure plan for impoundments closing-in-place requires a "description of the final cover system" and "*how the final cover system will achieve the performance standards specified in paragraph (d)*." 40 C.F.R. § 257.102(b)(1)(iii) (emphasis added). The performance standards "specified in paragraph (d)" include the requirement to minimize, control or eliminate to the maximum extent feasible the post-closure infiltration of liquid into the waste, the very standard that EPA now asserts includes horizontal groundwater flow intersecting the base of the unit. But there is no similar requirement to describe how facilities should address groundwater flow to meet the closure standard. Rather, if through groundwater monitoring, a site determines that lateral groundwater flow is an issue, the process to address it is corrective action, independent of closure. The regulatory text is clear that the closure standard is to be met solely through installation and performance of the final cover system.

Second, the rule directs that the final cover system meet a specified "permeability" standard and ensure that "[t]he infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer" meeting specified criteria. *Id.* at § 257.102(d)(3)(i)(A)-(B). Here too, the regulatory text makes clear that the performance standard's direction to prevent "the post-closure infiltration of liquids into the waste" is tied directly to the implementation of a final cover system meeting specified permeability criteria and the use of an infiltration system designed to minimize such infiltration. Notably, while the performance standard provides detailed specifications for the adequacy of the cover system to prevent post-closure infiltration into the closed unit, the rule says *nothing* about the measures necessary to prevent horizontal groundwater "infiltration" into the base of the unit, let alone even mentioning this purported form of infiltration. Thus, in contrast to the specific design measures to prevent post-closure infiltration through the cover system, the absence of any corresponding regulatory standards to address the potential for post-closure infiltration through horizontal groundwater flow only confirms that the rule's performance standard considers "infiltration" as the vertical flow of liquids through the closed unit's covered system.

Even assuming, for purposes of argument, that EPA's unbridled definition of "infiltration" could be read into the closure performance standard, the rule provides no criteria—in contrast to the detailed criteria for the necessary cover system—for how to "control, minimize or eliminate to the maximum extent feasible" horizonal, groundwater "infiltration." This type of undefined performance standard would be void for vagueness, especially when compared to the great lengths EPA went to specify the other technical criteria to address vertical infiltration in the performance standard.

EPA's preamble discussion of the performance standard is clear in that the "infiltration" referenced in the performance standard at § 257.102(d)(1)(i) is infiltration of liquids through the unit's cover system. This discussion does not mention or suggest that the infiltration to be addressed could come from any direction other than downward through the cap, let alone horizontal ground water flow through the base of the unit. In explaining the purpose of the detailed performance standard for the cover system for units closing-in-place, EPA explains:

> This standard is modeled after the closure performance standard applicable to interim status hazardous waste units under § 265.111. The final rule requires that any final cover system *control, minimize or eliminate, to the maximum extent*

> *practicable, post-closure infiltration of liquids into the waste* and releases of leachate (in addition to CCR or contaminated runoff) to the ground or surface waters. . . . Under this performance standard, if the cover system results in *liquids infiltration* or releases of leachate from the CCR unit, the final cover would not be an appropriate cover.[46]

EPA's explanation references the precise regulatory text used in the rule's closure-in-place performance standard at § 257.102(d)(1)(i) concerning the type of "infiltration" being addressed by the regulatory text – *i.e.*, infiltration through the cap system and not the unbridled definition now suggested by EPA in response to the CCR Part A submissions.

Similarly, the Risk Assessment supporting the CCR Rule is also clear that infiltration only encompasses vertical movement of liquids through the cap system. In that document, EPA explains:

> During operation, free liquids that are ponded in the impoundment create a strong hydraulic head that acts to increase infiltration though the base of the impoundment. The removal of free liquids and capping during closure reduces the hydraulic head and the rate of contaminant migration. After closure is complete, *infiltration through the impoundments is driven only by percolation of incident precipitation through the cap*.[47]

EPA cannot now claim that the rule is intended to address horizontal flow of groundwater as part of the closure requirements when the Agency itself did not consider that factor in the very assessment that forms the basis for each of the provisions EPA promulgated to meet the Subtitle D protectiveness standard.

For all of these reasons, EPA's interpretation of the term "infiltration" in 257.102(d) as including anything more than the vertical infiltration of liquids through the closed unit is inconsistent with the framework of the CCR rule and cannot serve as the basis for asserting that the closure plans are not in compliance with the CCR Rule.

4. EPA Did Not Provide Fair Notice of Its Legal Interpretations

Even assuming, for purposes of argument, that there is a valid basis for EPA's legal interpretations regarding how the performance standards in 40 C.F.R. § 257.102(d) must be met, the Agency's positions cannot be imposed on the regulated entities because EPA did not provide fair notice to the regulated community regarding these compliance obligations. That fair notice must be provided to regulated parties is based on the fundamental principle of Due Process that "laws which regulate persons or entities must give fair notice of conduct that is forbidden or required." *FCC v. Fox Television Stations, Inc.*, 567 U.S. 238, 253 (2012). Applying this principle in practice, courts have held that fair notice requires the agency to have "state[d] with *ascertainable certainty* what is meant by the standards [it] has promulgated." *Diamond Roofing Co. v. OHSRC*, 528 F.2d 645, 649 (5th Cir. 1976) (emphasis added). If fair notice is not provided—*i.e.*, if it

[46] 80 Fed. Reg. 21,302, 21,413 (April 17, 2015) (emphasis added)
[47] EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals, Docket ID No. EPA-HQ-RCRA-2009-0640-11993, App. K at K-1 (Dec. 2014) (emphasis added).

cannot be determined with "ascertainable certainty" what the law requires—an agency cannot enforce this position against a regulated entity.

As the D.C. Circuit has explained, "[i]f, by reviewing the regulations and other public statements issued by the agency, a regulated party acting in good faith would be able to identify, with 'ascertainable certainty,' the standards with which the agency expects parties to conform, then the agency has fairly notified a petitioner of the agency's interpretation." *Gen. Elec. Co. v. U.S. E.P.A.*, 53 F.3d 1324, 1329 (D.C. Cir. 1995) (citing *Diamond Roofing*). But "when regulations can reasonably be interpreted in a way other than the agency does, the agency must give regulated entities notice *before* enforcing requirements based on that interpretation." *Id.* (citing *Satellite Broad. Co., Inc. v. FCC*, 824 F.2d 1, 3–4).[48] For similar reasons, courts have *not* deferred to an agency interpretation of its own regulations when such an interpretation creates "unfair surprise" to regulated parties or "an interpretation that would have imposed retroactive liability on parties for longstanding conduct that the agency had never before addressed." *Kisor v. Wilkie*, __ U.S. __, 139 S. Ct. 2400, 2,417-18 (2019).

The key question here, therefore, is whether the regulated community, acting in good faith, should have known with "ascertainable certainty" – *i.e.*, whether there was *no other way* to read the CCR closure performance standard – as interpreting the term "infiltration" in 40 C.F.R. § 257.102(d)(1)(i) to include liquids entering the base of the CCR unit from any direction and for the obligation in 40 C.F.R. § 257.102(d)(2)(i) to eliminate free liquids through the removal of liquid waste to encompass porewater derived from the lateral movement of groundwater in the base of the unit. For all the reasons discussed above regarding the legal flaws in EPA's interpretations regarding these positions, the answer is "no."

Further, despite EPA's assertion that the Part A decisions restate EPA's "consistently held position that landfills and surface impoundments cannot be closed in contact with groundwater," the Agency has never previously—orally or in writing—interpreted the rule this way. For example, EPA's own website contains a number of FAQs, but none of these contain this so-called "consistently held position."'

And the Agency was aware that the regulated industry did not interpret the closure performance standard to require removal of groundwater or address horizontal infiltration. In March 2017, USWAG wrote to EPA to alert the Agency to and to counter arguments of the Southern Environmental Law Center ("SELC") that the option of closing CCR impoundments under the rule's closure-in-place option under 40 C.F.R. § 257.102(d) was prohibited when CCR was in contact with groundwater.[49] USWAG set forth a detailed explanation as to why this position was inconsistent with the regulations and made clear that the regulated community was not interpreting the rule in the manner espoused by SELC. EPA never responded to the letter, let alone suggested that this interpretation was at odds with EPA's views, though the letter made clear how the regulated community was implementing the rule. EPA's newly articulated positions, issued almost 4 years after USWAG made clear to EPA how regulated parties were complying with the rule, is precisely the type of "unfair surprise" and imposition of "retroactive liability on parties for

[48] *See also Rollins Envt'l Services v. EPA*, 937 F.2d 650, 655 (D.C. Cir. 1991) (Circuit Judge Edwards concurring and dissenting in part) ("The question is whether Rollins had 'fair warning' sufficient to justify a finding of a violation. There can be no violation to vitiate if Rollins could not reasonably have known what the agency had in mind.").

[49] *See* Letter from USWAG Executive Director Jim Roewer to Barnes Johnson, Director, Office of Resource Conservation and Recovery (March 20, 2017).

longstanding conduct that the agency had never before addressed" that Supreme Court found unlawful in *Kisor*.

There are other ways to reasonably read the applicable regulations in a manner other than that now put forward by EPA. EPA's pronouncements in the Proposed Decisions are precisely the type of unfair surprise that the "fair notice" doctrine is intended to guard against. Accordingly, these interpretations cannot serve as the basis for denying the Part A Demonstrations on grounds that the facilities were not in compliance with the applicable CCR closure standards.

5. EPA's New Interpretations Amend the Closure Performance Standards in Violation of the APA.

Section 553 of the Administrative Procedure Act ("APA") imposes a procedural requirement on federal agencies when promulgating, amending, modifying, or repealing a rule or regulation. 5 U.S.C. § 553; *see also Am. Hosp. Ass'n v. Bowen*, 834 F.2d 1037, 1044 (D.C. Cir. 1987) (stating that agencies must comply with Section 553 "prior to a rule's promulgation, amendment, modification, or repeal"). This requires an agency taking such action to first publish "[g]eneral notice of proposed rulemaking . . . in the Federal Register" and "give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation." 5 U.S.C. § 553(b)-(c).

EPA's new interpretations of the term "infiltration" and the standard for "eliminating free liquids through the removal of liquid wastes" effectively amend key provisions of the CCR Rule's closure performance standards in § 257.102(d). Such an expansion of the scope and substantive requirements of the CCR Rule involve legislative rulemaking requiring the APA's notice and comment procedures.

Courts have made clear that "an agency creates substantive rules when issuing 'reasonable but arbitrary (not in the 'arbitrary or capricious' sense) rules that are consistent with the statute or regulation under which the rules are promulgated but not derived from it, because they represent an arbitrary choice among methods of implementation.'" *Hoctor v. USDA*, 82 F.3d 165, 170 (7th Cir. 1996). As explained above, EPA's interpretations of the rule's closure performance standards are not reasonable. But even if reasonable, the interpretations certainly are "arbitrary" in that they represent an "arbitrary choice among methods of implementation" of the CCR closure performance standards. As discussed above, they are at odds with the rule's regulatory text and applicable EPA technical guidance upon which QPEs reasonably relied in certifying compliance with the rule's closure requirements. "When agencies base rules on arbitrary choices they are legislating . . . so the[ ] rules . . . require notice and comment rulemaking, a procedure that is analogous to the procedure employed by legislatures in making statutes." *Id.* at 170-71.

EPA's proffered interpretations of the rule's closure performance standards in section 257.102(d) constitute substantive rulemaking subject to the APA's notice and comment requirements.[50] EPA is not simply applying the existing regulations as written to specific Part A Demonstrations. Instead, EPA has announced new substantive standards and requirements that it is directing all facilities subject to the rule to follow (including facilities that did not even submit a Part A

[50] *See General Electric Co. v. EPA*, 290 F.3d 377, 385-6 (D.C. Cir. 2002) (vacating EPA guidance document as legislative rule that EPA issued without following APA procedures).

demonstration).[51] EPA has also directed States to follow EPA's new requirements for closure announced in EPA's proposed Part A decisions in their implementation of the CCR Rule under State programs, further evidencing that EPA is engaging in legislative rulemaking through the Proposed Decisions. But EPA cannot impose new regulations and requirements without following the APA publication and notice-and-comment requirements.

Even if EPA's new position does not amount to a legislative rule, an interpretive rule cannot serve as the basis for an Agency's finding of non-compliance. While an agency can issue "interpretive rules" without going through the notice-and-comment rulemaking process, such rules do not have the force and effect of law. Instead, interpretive rules are "meant only to 'advise the public' of how the agency understands, and is likely to apply, its binding statutes and legislative rules," i.e., regulations.[52] Importantly, "[a]n interpretive rule itself never can form 'the basis for an enforcement action' because . . . such a rule does not impose any 'legally binding requirements' on private parties."[53]

Thus, whether legislative or interpretive, EPA's position on the closure performance standard cannot serve as the basis for finding that facilities are not in compliance with the CCR Rule's closure provisions.

C. The OGS Ash Pond Closure Plan meets the requirements of the CCR Rule.

EPA is proposing to find that the closure plan for the OGS Ash Pond is not in compliance with the CCR Rule because (1) IPL plans to use material from the hydrated ash pile to close the OGS Ash Pond; and (2) the closure plan does not adequately explain how the closure-in-place meets the performance standards in the rule, particularly in light of EPA's preliminary conclusion that the OGS Ash Pond is in contact with groundwater. EPA's proposal is incorrect in its evaluation of the closure plan.

1. CCR will not be beneficially used for purposes of closing the OGS Ash Pond.

As discussed above, IPL does not plan to use material from the hydrated ash pile for purposes of closing the OGS Ash Pond. This material is sent off-site for beneficial use. The closure plan makes this clear on page 4-1.[54]

2. IPL adequately describes how the OGS Ash Pond will be closed in accordance with the CCR Rule.

[51] *General Electric Co*., 290 F.3d at 385 (holding that EPA guidance document was a legislative rule that required APA procedures because "[o]n its face the Guidance Document imposes binding obligations on applicants to submit applications that conform to the Document[.]").
[52] *Kisor v. Wilkie*, 588 U.S. __, 139 S. Ct. 2400, 2420 (2019).
[53] Id.
[54] IPL also notes that EPA has misinterpreted the prohibition on "placing CCR" in 40 C.F.R. § 257.101. Contrary to EPA's assertion, this prohibition does not apply to beneficial use of CCR. Any other such interpretation is inconsistent with RCRA's statutory definition of "disposal" and with the CCR Rule's exemption of all beneficial uses of CCR. *See* comments from Utility Solid Waste Activities Group dated April 30, 2018 in docket EPA-HQ-OLEM-2017-0286.

EPA's proposal overstates what is required for a closure plan. EPA appears to assert that a facility must describe *in detail* how it will meet each specific closure performance standard. But this is not what the rule requires, with the exception of a description of the methods and procedures used to install the final cover system. Section 257.102(b) lays out the specific minimum requirements that the facility must include in the closure plan, including:

> (i) A narrative description of how the CCR unit will be closed in accordance with this section.
>
> (ii) If closure of the CCR unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with paragraph (c) of this section.
>
> (iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with paragraph (d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section.
>
> (iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.
>
> (v) An estimate of the largest area of the CCR unit ever requiring a final cover as required by paragraph (d) of this section at any time during the CCR unit's active life.

Thus, when closing in place, the only specific discussion on meeting the closure performance standard required is that for the final cover system. IPL clearly has met this requirement in Section 3 of the original 2016 closure plan, which was confirmed in the 2020 update, both of which were certified as compliant by IPL's QPE.[55]

In any case, closure of the OGS Ash Pond has not yet begun. EPA cannot find OGS in noncompliance based on an event that has not yet occurred. To the extent there is any deficiency in the OGS Ash Pond Closure Plan, this deficiency can be remedied accordingly and should not serve as the basis for a denial of the facility's Part A application.

D. EPA's analysis of the site geology near the OGS Ash Pond is flawed.

EPA's analysis of groundwater levels at OGS leads to a preliminary conclusion that ash from the OGS Ash Pond is in contact with groundwater.[56] The analysis draws from the Demonstration and other information posted on the Alliant Energy CCR compliance web site for OGS. Critical to this evaluation, EPA cites the following as evidence: "the natural clay layer is not continuous in and around the OGS Ash Pond. The site boring logs indicate that clay does exist beneath the unit in

[55] The only change to Section 3 of the Closure Plan in 2020 was an update to the specification for the clay used for the "infiltration" layer. IPL elected to reduce the hydraulic conductivity to $1x10^{-7}$ cm/second, which exceeds the requirements of the CCR Rule.
[56] Proposed Decision, 36-40.

some places around the unit."[57] Unfortunately, EPA's analysis appears to be incomplete and flawed, leading to an incorrect understanding of the site geology, as described below.

1. Monitoring well MW-301 is a background well that is not located at the OGS Ash Pond.

EPA cites a lack of clay in the boring log for monitoring well MW-301 as evidence that clay is not present in *and around* the OGS Ash Pond. First, the presence of clay "around" the OGS Ash Pond is irrelevant; the closure performance standard is limited to the areas where closure in place is proposed. Second, MW-301 is a background well that is located more than 1,800 feet west of the OGS Ash Pond. There are numerous borings closer to the OGS Ash Pond that show presence of the clay layer.

2. EPA's review of monitoring well MW-303 is incomplete without a review of all boring logs.

EPA cites a lack of clay in the boring log for monitoring well MW-303 as evidence that clay is not present in and around the OGS Ash Pond. The boring log for MW-303 describes the upper 9 feet of the soil boring as fill because the location was previously excavated with a hydrovac to verify no utilities were present at the location of the well and backfilled with sand before the start of drilling with hollow stem augers. The hydrovac cuttings were not logged. Claiming that the clay layer is not continuous due to the lack of native soil classification in the upper 9 feet of this boring ignores the other 49 boring locations/logs provided in the History of Construction document cited by EPA from the area of the OGS Ash Pond and ZLD Pond. The additional boring logs provide evidence of a continuous clay layer.

3. EPA's analysis of sieve analysis results at boring 20 is incorrect.

EPA states "Sieve analysis results show that boring 20, which is within the footprint of the OGS Ash Pond, is comprised of 95% sand and 5% silt and clay." EPA uses the sieve analysis of a sand sample collected from boring 20 at a depth of 8.5 to 10 feet, or an elevation of 648.0 to 649.5 feet, as evidence that the clay layer is not present in all locations in and around the OGS Ash Pond. EPA's line of evidence does not account for the 5.5-foot-thick clay layer shown on the log for boring 20 *above* the sand sample at an elevation of 652.5 to 658.0 feet. The 5.5-foot layer of clay is present on the log at and below the approximate bottom elevation of the OGS Ash Pond and is evidence that the clay layer is present in the area of the OGS Ash Pond.

E. OGS cannot be found in non-compliance with requirements certified by QPEs

In several places, EPA is proposing to find OGS in noncompliance with provisions for which OGS obtained a certification of compliance from a Qualified Professional Engineer (QPE). But EPA cannot find OGS in noncompliance when it has justifiably relied upon a QPE's certification. The rule is necessarily designed this way because of its self-implementing nature and EPA's recognition that, absent EPA oversight, an independent and qualified professional is required to

[57] Proposed Decision at 38.

provide assurance to EPA and the public that the rule's technical criteria are being met. Given this, the QPEs oversee whether a facility is in compliance with the rule, much like EPA's role in the context of more traditional federal permitting programs. A QPE is not a "rubber stamp" of approval. Rather, the rule is specifically designed to ensure that QPE certifications are objective and that the consequences of inaccurate certifications are to be resolved with the QPE (*e.g.*, as discussed below, with the potential loss of a professional license and/or fines) and not by the after-the-fact assertion that an owner/operator who has justifiably relied upon the certification is in non-compliance with the rule.

While it is possible that resolution of any technical dispute between EPA and the QPE may result in future modifications to a facility's operations, it cannot be the basis for finding that the facility currently is not in compliance with applicable CCR Rules and thus serve as the basis for proposing to deny a complete Part A submission. This is because reliance upon a QPE certification is the basis for a facility to make a compliance demonstration with respect to those elements of the rule covered by the QPE certification. The rule's regulatory text and supporting preamble discussion confirm this point.

For example, with respect to meeting the rule's groundwater performance standard (including the requisite number and location of groundwater monitoring wells), the rule provides that the "owner or operator must obtain a certification from a qualified professional engineer stating that the groundwater monitoring system has been designed and constructed *to meet the requirements of this section* [*i.e.*, the rule groundwater performance standard]." 40 C.F.R. § 257.91(f) (emphasis added). Similarly, with respect to an alternative source demonstration, the rule provides that "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." *Id*. at § 257.95(g)(3(ii).

The definition of QPE makes clear that a QPE has the specialized training and site-specific knowledge to make these compliance certifications:

> An individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under this subpart. Professional engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.[58]

As explained above, this regulatory approach was necessarily established by EPA because of the rule's self-implementing nature and EPA's recognition that QPE certifications are, in effect, to act in place of a regulatory authority's sign off (typically provided through a permit). *See* 80 Fed. Reg. at 21,335-37. To ensure regulatory reliance on QPE certifications, the Agency specifically "re-evaluated the performance standards throughout the final rule to ensure that the requirements are sufficiently objective and technically precise that a qualified *engineer will be able to certify that they are met*." 80 Fed. Reg. at 21,335 (emphasis added). In response to commenters' concern about the over reliance on QPE certifications as the means for assessing compliance, EPA reiterated that the "specific technical standards" included in the rule "will operate to significantly constrain the facilities activities and discretion" and that the "certifications required by the rule

[58] 40 C.F.R. § 257.53.

supplement these technical requirements" along with the requirement to post the certifications to publicly available websites. *Id*. at 21,335.

EPA went to great lengths in the rule's preamble to underscore the reliability and objectivity of QPE certifications. Referencing other programs where a QPE plays a similar regulatory compliance role (*e.g.*, EPA's SPCC program), EPA explained "that professional engineers, whether independent or employees of a facility, being professionals, will uphold the integrity of their profession and only certify documents that meet the prescribed regulatory requirements; and that the integrity of both the professional engineer and the professional oversight boards licensing professional engineers are sufficient to prevent any abuses." *Id*. at 21,336. It is the threat of fines being imposed on the QPEs and/or loss of their professional licenses that EPA correctly reasoned guards against inaccurate, negligent, or biased QPE certifications. As EPA explained, "[i]n fact, this personal liability of the professional engineer is one of the primary reasons that commenters to the 'Burden Reduction Rule' supported the idea that RCRA certification should only be done by licensed professional engineers." *Id*. at 21,337. Similarly, for QPE certifications under the CCR Rule, EPA concluded that "[i]n light of the third-party oversight provided by the state licensing boards in combination with the numerous recordkeeping and recording requirements established in this rule, the Agency is confident that abuses of the certification requirements will be minimal, and that human health and the environment will be protected." And while EPA now has enforcement authority over the CCR Rule,[59] nothing in that statutory amendment replaces the self-implementing nature of the CCR Rule and the reliance on QPE certifications until such time that EPA issues and implements a federal permitting program for the rule or amends the rule to allow EPA to overrule QPE certifications. To date, EPA has not taken such action.

Indeed, the SPCC regulatory program explicitly provides, unlike the CCR Rule, that the QPE certification "shall in no way relieve the owner or operator of a facility of his duty to prepare and fully implement such Plan in accordance with the requirements of this part."[60] EPA elaborated in the preamble that "[w]hile we generally agree that certification by a PE should show that all necessary equipment and planning are in place, we reserve the right to make a determination that additional measures may be necessary to comply with the rule."[61] In other words, where EPA wanted to make clear to the regulated community that reliance on a regulatory mandated QPE certification did not ensure compliance with the regulations, it knew how to say so and to incorporate such a caveat on the QPE compliance certification in the regulations themselves. EPA has not done so in the CCR Rule; indeed, just to the contrary, the Agency has made clear both in the preamble of the CCR Rule and the plain language of the regulatory text, that a QPE certification under the CCR Rule is the regulatory mechanism for demonstrating compliance with the applicable technical standards. Under this framework, EPA cannot substitute its judgment for the professional engineer's judgment as long as there is some objective basis for the engineer's determination.[62]

In short, the CCR Rule contemplates the regulated community relying on these third-party certifications to demonstrate compliance. In promulgating the final regulations, EPA expressly

[59] Water Infrastructure Improvements for the Nation Act, 42 U.S.C. §6945(d).
[60] 40 C.F.R. § 112.3(d)(2).
[61] 67 Fed. Reg. 47042, 47052 (July 17, 2002)
[62] *Cf. United States v. DTE*, 711 F,3d 643, 650 (6th Cir. 2013) (If EPA can "second-guess" source's technical determinations, "then a project-and-report scheme would be transformed into a prior approval scheme").

"re-evaluated" the performance standards in the rule to ensure that they are "specifically precise" so that a qualified professional with specialized knowledge can objectively certify compliance with those standards. Again, while a subsequent disagreement by EPA with the QPE may result in the facility ultimately amending its management operations, such disagreement cannot serve as finding a facility in non-compliance with the applicable standards. That is certainly true here where EPA has proffered no technical report, other than its belief and assertions in the Proposed Decision, that the QPE certification is inaccurate. Such a rejection of the QPE certifications is inconsistent with the plain text of the rule and the role of the QPE in the CCR Rule's self-implementing program.

F. Groundwater Monitoring Network

EPA is proposing to determine that the groundwater monitoring system at the downgradient boundary of the ZLD Pond does not meet the requirements of 40 C.F.R. § 257.91(a)(2) and that the QPE certification for the ZLD Pond groundwater monitoring system fails to meet the requirements of 40 C.F.R. § 257.91(f).[63] Specific issues identified by EPA in its proposed decision include the following:

- The QPE certification does not provide the basis for determining that one upgradient and three downgradient wells are sufficient to meet the requirements of 40 C.F.R. § 257.91.

- The QPE certification does not consider the size of the ZLD Pond, the length of the downgradient boundary, or any information about construction of the ZLD Pond (e.g., lined or unlined). It also does not consider any of the site-specific data required under 40 C.F.R. § 257.9l(b) (e.g., groundwater flow rate, hydraulic conductivities, geologic unit and fill materials, stratigraphy, or porosities and effective porosities), except for noting the general direction of groundwater flow.

- The QPE certification does not discuss any specific requirements of 40 C.F.R. § 257.91, such as the requirement to accurately characterize the quality of groundwater passing the waste boundary of the unit and monitor all potential contaminant pathways. 40 C.F.R. §§ 257.91(a)(2),(c)(2).

- Three borings are not sufficient information to draw conclusions about the subsurface geology along a unit boundary that is 2,000 feet long. Even if the geology is consistent along the downgradient boundary, this fact would not support the determination that three downgradient wells are sufficient to meet the performance standard in 40 C.F.R. § 257.91(a)(2), including to monitor all potential contaminant pathways along the 2,000-foot downgradient ZLD Pond boundary.

IPL disagrees that its established groundwater monitoring system does not meet the requirements of the CCR Rule. The groundwater monitoring system for the ZLD Pond meets the requirements of 40 C.F.R. § 257.91(c), which requires a minimum of one upgradient monitoring well and three downgradient compliance monitoring wells. There is no minimum spacing requirement and flow at the location of the compliance wells at the waste boundary is consistent from the pond to the

[63] Proposed Decision at 42.

northeast. In fact, EPA explicitly declined to establish more specific requirements and relied on the judgment of a QPE when it finalized the CCR Rule in 2015:

> "EPA considered establishing a more prescriptive set of requirements, including a specified number, location, and design of monitoring wells, but because of the highly site specific nature of developing an adequate groundwater monitoring system, determined that it lacked sufficient information to be able to design a single groundwater monitoring system that would be nationally protective at all sites. A properly designed system must account for many variables, most of which are highly dependent on the individual characteristics of the unit and the facility site. Consequently, the final rule leaves the exact system design to be determined by those at the site, including a qualified professional engineer, who can tailor the design of the system to the unit and site conditions."[64]

Justification for the design of the monitoring network was included in an April 17, 2019 letter from SCS Engineers to Alliant Energy, titled, Ottumwa Generating Station Zero Liquids Discharge Pond – Monitoring Network Supporting Documentation. The supporting material for the QPE certification, and its justification for the minimum number of monitoring wells, was contained in this letter. Specifically, the site-specific geologic information consistently shows the uppermost aquifer below unconsolidated clay and silt deposits. In addition to the site-specific data referenced in the support documents, additional site-specific soil borings show similar conditions along the down gradient boundary of the ZLD Pond. This site-specific data is consistent with regional data. Further, the site-specific geologic information shows that the aquifer is not fractured, faulted, or folded, and that the hydraulic conductivities for the ZLD Pond monitoring wells are relatively uniform (ranging over less than one order of magnitude[65]). Given the consistent site geology and flow direction, monitoring wells installed near the top of the alluvial aquifer, below the clay and silt, are in the best vertical location to intercept contaminant pathways for a release from the ZLDP. The wells are located at locations to monitor the pathways from the northern, central, and southern portions of the ZLDP and accurately represent the quality of groundwater passing the waste boundary of the CCR unit as required by 40 C.F.R. § 257.91(a)(2). In other words, the ZLD Pond is "a small unit with simple geology, a flat and constant hydraulic gradient, uniform hydraulic conductivity, low seepage velocity, and high dispersivity potential" and is an appropriate location for which the minimum number of wells could be sufficient to meet the overall performance standard, as envisioned by EPA in the preamble to the CCR Rule.[66]

This letter justifying the monitoring network design was placed in the Operating Record for the site, and the QPE certification references the additional information contained in the Operating Record that provides the basis for supporting a determination that the minimum number of monitoring wells is appropriate. There is no separate requirement to include this information within the certification document or post it on the website.

G. Annual Groundwater Monitoring Reports

EPA is proposing to determine that OGS's Annual Groundwater Monitoring and Corrective Action (GWMCA) Reports do not contain all information required by 40 C.F.R. § 257.90(e)(3),

[64] 80 FR 21400
[65] See Table 4 in the ZLD Pond 2021 Annual Groundwater Monitoring Report.
[66] 80 FR 21400

including groundwater elevation measurements, flow rate and direction, and statistical analyses. In fact, the annual GWMCA reports met the requirements of the rule that were in effect at the time the reports were prepared. Groundwater elevations were measured as required[67] and groundwater elevation data have been included in the laboratory reports within the annual reports to date. The elevation data are also summarized in tabular form beginning with the 2020 annual report, and the annual report tables include all historical groundwater elevation data for the site.

The annual report requirements listed in §257.90(e)(3) do not require statistical analyses, groundwater flow maps, or groundwater flow rate and direction calculations to be included with the annual reports. Statistical analyses have been conducted as required, and groundwater flow maps and calculations have been prepared. EPA may prefer for this information to be included in annual reports, and IPL has demonstrated a willingness to provide this information. In fact, based on oral communication with EPA in 2020, the facility has included statistical analyses, groundwater flow maps, and flow rate calculations in annual reports beginning with the annual report for 2020. However, EPA's preference does not equate to a requirement within §257.90(e)(3) and cannot be the basis for a denial. Further, §257.103(f)(1)(iv)(B) does not include Groundwater Monitoring Reports in the list of documents required to demonstrate compliance with the CCR Rule.

H. Alternative Source Demonstration (ASD)

1. IPL Completed an ASD for SSLs detected at the ZLD Pond within the required timeframe.

EPA is proposing to determine that IPL failed to conduct an ASD for contaminants detected at statistically significant levels (SSLs) exceeding groundwater protection standards (GPS) in December 2019 and February 2020 within the deadline in 40 C.F.R. § 257.95(g)(3)(ii)[68]. This is incorrect.

In accordance with 40 C.F.R. § 257.95(g)(3), within 90 days of finding an SSL above the GPS for any of the constituents listed in Appendix IV, the owner or operator must either:

- (i) Initiate an assessment of corrective measures as required by § 257.96; or
- (ii) Demonstrate that a source other than the CCR unit caused the contamination.

Based on the confidence interval statistical method selected for evaluation of assessment monitoring in accordance with 40 C.F.R. § 257.93(f), cobalt was first determined to be at an SSL above the GPS on July 13, 2020. An ASD was completed 90 days later, on October 12, 2020. Further discussion on the development of this determination follows.

The CCR Rule does not specify the methodology for determining whether a constituent is present at an SSL above the GPS. Therefore, IPL adopted the methodology recommended in EPA's Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities

[67] On page 47 of the Proposed Decision, EPA cites §257.93(e) as the requirement to measure groundwater elevation in each well, each time it is sampled. §257.93(e) does not speak to this, but IPL assumes this is a typographical error and EPA intended to refer to §257.93(c), which speaks to groundwater elevation measurements.
[68] Proposed Decision at 48.

(EPA 530-R-09-007, March 2009). The Unified Guidance recommends the use of confidence intervals for comparison of assessment monitoring data to fixed GPS values. Specifically, the suggested approach for comparing assessment groundwater monitoring data to GPS values based on long-term chronic health risk, such as drinking water Maximum Contaminant Levels (MCLs), is to compare the lower confidence limit around the arithmetic mean with the fixed GPS. For non-normally distributed data, the lower confidence limit (LCL) around the median can be used. A minimum of four sample results are recommended for evaluation of the lower confidence limit for the mean or median concentration of a constituent at an individual well. Importantly, an SSL cannot be identified until the statistical analysis is completed.

When assessment monitoring was initiated for the ZLD Pond and the first round of Appendix IV samples was collected in December 2019, cobalt was detected at a concentration above the GPS in the sample from MW-307. This detection was not consistent with cobalt results at this well during the background monitoring period, which were all below the GPS. Thus, this single result above the GPS did not constitute an SSL. Further, if the background data were used to calculate a LCL for cobalt, the LCL would be below the GPS. Additional samples were collected in February and April 2020 and the cobalt results for these samples also exceeded the GPS, suggesting an increasing trend compared to the background data. Although four samples are recommended for the LCL calculation, SCS identified an SSL for cobalt at MW-307 based on the first three assessment monitoring samples and an anticipated LCL above the GPS when considering the increasing trend. This was a conservative approach when compared to waiting for the fourth sample. The SSL determination was made on July 13, 2020, based on the December 2019, February 2020, and April 2020 results. The ASD was completed 90 days later, on October 12, 2020.

2. The ASD for cobalt at the ZLD Pond is supported by site-specific facts and certified by a QPE as required.

EPA is also proposing to determine that the ASD ultimately conducted for cobalt SSLs at the ZLD Pond failed to meet the requirement of 40 C.F.R. § 257.95(g)(3)(ii)[69].

The ASD for cobalt at the ZLD Pond is supported by site-specific facts and certified by a QPE as required. In addition, this issue is now moot, because the ZLD Pond has been excavated, and the Corrective Action for the OGS Ash Pond addresses the same contaminant and flow path. Additional investigation is in progress in the MW-307 area as part of the selection of remedy for the OGS Ash Pond, and EPA has indicated agreement with the current investigation approach.[70] Thus, even if the ASD for the ZLD Pond is not sufficient, IPL would have performed the same characterization, assessment of corrective measures, and remedy selection steps it is otherwise taking to address the OGS Ash Pond.

I. Corrective Action

EPA is proposing to determine that IPL has failed to comply with several corrective action requirements at the OGS Ash Pond, including (1) characterization of the release and of relevant site conditions that may affect the remedy ultimately selected is insufficient to support an ACM,

[69] Proposed Decision at 48.
[70] Proposed Decision at 53-54.

as required by 40 C.F.R. § 257.95(g) and 40 C.F.R. § 257.96(a); (2) the assessment that was conducted does not consider all of the criteria in 40 C.F.R. § 257.96(c); and (3) portions of the assessment contain inaccurate statements, lack supporting data, or apply assessment criteria inconsistently[71]. The flaws in EPA analysis are discussed below.

1. The Rule Sets Strict Timeframes for Completing the Assessment of Corrective Measures

EPA's complaint is not that IPL did not conduct a characterization of the nature and extent of the release or an assessment of corrective measures. Rather, EPA disagrees with the approach and analyses taken by IPL and its QPE and believes the facility should have done more in the time provided under the rule. Thus, as an initial matter, IPL first addresses what appears to be an expansion of the corrective action requirements that is at odds with the plain language of the rule and reflects an unrealistic expectation of what facilities can accomplish in the corrective action timeframes provided under the rule.

When monitoring results trigger corrective action, the rule requires the facility to characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. 40 C.F.R. § 257.95(g)(1). This characterization must be "sufficient to support a complete and accurate assessment of the corrective measures" under section 257.96 and should include the following minimum measures: (1) Install additional monitoring wells necessary to define the contaminant plume(s); (2) Collect data on the nature and estimated quantity of material released including specific information on the constituents listed in appendix IV of this part and the levels at which they are present in the material released; (3) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well; and (4) sample all wells to characterize the nature and extent of the release. *Id.*

Following the characterization, the facility must complete an assessment of corrective measures under section 257.96. This assessment "must include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under section 257.97 addressing at least the following: (1) The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination; (2) The time required to begin and complete the remedy; (3) The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s)." 40 C.F.R. § 257.96(c).

This entire process—the characterization and assessment of corrective measures—must be completed within 180 to 240 days.[72] Thus, the "sufficiency" of a characterization is necessarily dependent on site-specific conditions and constrained by the regulatory timeframe for completing the assessment of corrective measures. This time constraint also limits the level of analysis that can be incorporated into an assessment of corrective measures. And, as a facility gathers site data, it may discover conditions that warrant additional investigation. For example, delineation of a plume could require multiple well-installation mobilizations that extend beyond the regulatory timeframe provided in the rule.

[71] Proposed Decision at 51.
[72] See 40 C.F.R. § 257.96(a).

That a facility may need to gather more data to support a selection of remedy does not make a characterization "insufficient" or an assessment of corrective measures "inaccurate," as EPA seems to contend. Instead, the rule contemplates that, to the extent needed, additional site-specific data can be completed following the assessment to support remedy selection. The remedy selection process—which has no set timeframe in the rule—can take years to complete, and requires a thorough and complete understanding of the nature and scope of the release that will often require a far more involved and lengthy investigation than that called for in the initial and time-limited release characterization obligation under § 257.95(g).

In short, release characterization is frequently a complex and time-consuming task depending on site-specific conditions. Thus, OGS's compliance with sections 257.95(g) and 257.96 should be based on its site-specific conditions and what could realistically be accomplished at the site during the short timeframes provided in the regulation.

IPL notes that it has asked EPA to provide examples of facilities that, in EPA's view, have performed an adequate characterization of nature and extent and an adequate assessment of corrective measures. EPA has stated it cannot provide an example because it has yet to identify a facility that has done so. In other words, across an entire industry, EPA has not encountered a facility has met the rule's corrective action requirements. If this is indeed the case, then EPA has either promulgated a rule from which no qualified professional could discern what actually is required—which is contrary to EPA's assertion in the 2015 preamble that the Agency was setting forth specific enough standards that QPE's would know what is required—or EPA is misinterpreting its own regulations and requiring more than can be accomplished in the regulatory timeframes provided. If so, this would make the rule either arbitrary and capricious as applied (by requiring the impossible) or void for vagueness for failing to set a standard even one facility could understand and satisfy.

2. Characterization of the Release and Relevant Site Conditions

IPL identified additional information that is needed to complete its assessment of corrective measures and select a remedy in the November 2020 ACM Addendum No. 1. IPL has continued to pursue this additional information since submitting the application. IPL has consistently stated the position that the 240-day timeframe allowed to complete the ACM under the CCR Rule is insufficient to conduct a full and complete assessment of the conditions at the OGS Ash Pond due, in part, to permitting required by local site conditions.

The following installation scope for assessment monitoring wells MW-310 and MW-311, along with the duration of time required to complete each scope item, is provided as an example of the typical timeframe associated with well installations at OGS:

- Well Location Selection, Planning, and Permit Preparation: Approximately 8 weeks
    - Historical flooding evaluation (Note: a majority of locations downgradient of the CCR units are within the 100-year floodplain or the floodway of the Des Moines River)
    - Field reconnaissance to select viable location options
    - Preliminary underground utilities evaluation
    - Real Estate ownership and farm property lease evaluation

    - Permit preparation
- Joint Application Review by USACE & IDNR: 7 weeks[73]
- County Floodplain Permit: 1 day
- County Well Construction Permit: 1 week
- Initial Driller Scheduling: Approximately 3 weeks
    - IPL does not control the variable timing of a Joint Application Review by IDNR.
    - Variability in agency response time limits the schedule certainty for state-licensed drilling assets.
    - IPL does not control drilling assets and depends on state-licensed drilling company backlog at time of scheduling.
- Flood Delay: Approximately 5 weeks.
    - Available downgradient monitoring well locations at OGS are located in the 100-year floodplain or floodway, which are prone to seasonal flooding.
- Driller Reschedule (after flood subsided): Approximately 7 weeks
    - IPL does not control state-licensed driller backlog.
- Well Installation and Utility Clearance: 1 week
- Well Development & Hydraulic Conductivity Testing: 1 day (on same mobilization as drilling for these wells)
- Well Survey: 4 weeks
    - IPL does not control the availability of local surveyors or their backlog of work.

The total time required to install MW-310 and MW-311 was 37 weeks (250 days).

The groundwater results from the initial sampling event at assessment monitoring wells MW-310 and MW-311 were not available before the ACM submittal deadline. Following the installation, sampling, and evaluation of the data from assessment monitoring wells MW-310 and MW-311, assessment monitoring wells MW-310A, MW-311A, and MW-305A were installed to provide additional information regarding the nature and extent of the cobalt impacts to groundwater. Evaluation of the compliance and assessment well data led to the installation of monitoring wells MW-312 and MW-313. These two wells are located between the well with cobalt GPS exceedances (MW-305) and downgradient well MW-310, which has no cobalt GPS exceedances. The new wells, MW-312 and MW-313, and saturated soil collected from these locations, is currently being evaluated to identify cobalt attenuation processes in the aquifer.

IPL has identified the additional information and site investigation activities described above as required to completely assess and select a remedy for the OGS Ash Pond in various corrective action documents and updates. EPA has commented that IPL's ACM Addendum No. 1 identifies "data yet to be gathered and explains how that data will be used to assess corrective measures".[74] EPA goes on to state in the proposed decision that "EPA believes this investigation is appropriate to characterize site conditions that may affect the remedy ultimately selected."[75]

[73] It is noteworthy that we have had experiences where this application review took substantially longer than 7 weeks. In conversations with IDNR, we understand that review times are driven in part by a state statute that requires floodplain applications to be reviewed in the order they are received. The composition of the queue is not within IPL's control. If multiple complex projects are received by IDNR ahead of IPL's relatively straightforward permitting question, IPL must wait until those complex cases are resolved.

[74] Proposed Decision at 53.
[75] Proposed Decision at 54.

EPA contends that the additional wells installed to characterize the release do not appear to be directly in the downgradient flow path of MW-305.[76] The locations of the additional wells (MW-310/310A and MW-311/311A) were chosen based on the likely flow path from MW-305 to the Des Moines River and by taking into account that the southeast flow direction of the river could influence groundwater flow closer to the river. The choice of locations for wells MW-310/310A and MW-311/311A was also significantly influenced by records of flooding across large parts of the land closer to the river. Historical USGS river elevation data and historical aerial imagery of the land near the river indicated a history of repeated flooding. The locations of both well nests were adjusted slightly to place them in areas where they could be accessed even when other areas near the river would be flooded over. EPA contends that Middle Avery Creek separates well MW-305 from MW-310/310 and MW-311/311A. However, Middle Avery Creek is shallow and is separated from the uppermost aquifer where the CCR wells are screened by a 17-foot-thick surficial clay layer.

Based on the groundwater flow information collected to date, two additional monitoring wells were installed in December 2021 between MW-305 and MW-310/310A and another downgradient well nest is planned to be installed north of MW-310/310A. These new wells will provide additional coverage of the flow path from well MW-305.

EPA states that statistical analyses of lithium and fluoride results from MW-310/310A and MW-311, which are "nature and extent" wells, are not required.[77] IPL agrees with this statement based on conversations with EPA regarding the requirements of 40 CFR 257.95(g) following issuance of the Proposed Decision. Further, lithium and fluoride have not been detected at SSLs above the GPS in the downgradient compliance wells. The fact that IPL has elected to conduct statistical analysis of the monitoring data for these parameters, even though not required by the regulations, cannot be a basis for denial of IPL's application.

EPA comments on the use of the Mann-Kendall trend test in the ACM and suggests that it was used as a model in lieu of site-specific data[78]. The Mann-Kendall trend test is a statistical evaluation of the site groundwater monitoring data. It is not a model. The Mann-Kendall trend analysis was performed because analysis of trends was recommended by EPA during a November 2020 meeting with IPL as one of the objectives to evaluate MNA in groundwater. Based on the data collected at the time of the ACM addendum, no statistically significant increasing or decreasing trends were identified in the analysis. The lack of trend in the Mann-Kendall analysis results is consistent with a stable plume, but on its own does not demonstrate that the cobalt plume is stable. The trend analysis is one part of the complete data analysis required to evaluate the plume conditions and will be repeated as additional monitoring data are acquired during corrective action.

The CCR Rule contemplates further analysis of the corrective measures during the Selection of Remedy process. IPL agrees that additional information is required to support selection of MNA as a remedy. IPL has not yet selected MNA or any other remedy (IPL withdrew the original Selection of Remedy Report in response to EPA comments on the original ACM). IPL is actively

[76] Proposed Decision at 52.
[77] Proposed Decision at 54.
[78] Proposed Decision at 54.

collecting information on the feasibility of MNA and all other alternatives as part of the Selection of Remedy process.

3. Assessment Criteria

EPA contends that "the assessment lacks an evaluation of cross-media impacts of the alternatives, as required by 40 C.F.R. § 257.97(c)(1)."[79] This statement is incorrect, as both the original and revised ACMs address cross-media impacts. See Section 6 in both reports. The discussion of each remedy includes an assessment of cross-media impacts within each subsection 6.1 through 6.8 as part of the Performance, Reliability, Implementation, and Impacts subheading.

4. Quality of Assessment

EPA contends that the revised ACM contains conclusions that are unsupported by data, that result from inconsistent application of the criteria, or that are based on inaccurate statements[80]. The specific comments and IPL's responses are outlined below.

(i) *Lack of data to support conclusions about monitored natural attenuation (MNA)* – EPA states that the revised ACM does not contain sufficient site-specific evidence to support the assessment on MNA through immobilization[81]. As discussed above, IPL identified additional data needs in the ACM addendum to support an evaluation of the MNA processes. In the Proposed Decision, EPA "expects that the data planned to be gathered … should be sufficient to support assessment of the alternatives according to the criteria in 40 C.F.R. § 257.96(c)."[82] The time frame for completion of the ACM was not adequate for a full evaluation of MNA, and continuation of the evaluation in the Selection of Remedy process is appropriate and ongoing.

Conversely, EPA appears to indicate an affinity for barrier walls and groundwater extraction systems because they are "proven technologies" even though EPA offers no site-specific basis that would suggest these technologies would be any more or less effective at OGS than other alternatives. IPL will continue to evaluate these technologies – and all alternatives – to select a remedy that complies with the corrective action requirements and is appropriate based on the site-specific information gathered at OGS.

(ii) *Inconsistent application of criteria* – EPA comments on several aspects of the assessment of corrective action alternatives in Table 5 of the revised ACM[83]. It is important to note that IPL has not selected a remedy for the OGS Ash Pond. Furthermore, IPL has identified additional investigation activities needed to support a remedy selection, and EPA has stated in the Proposed Decision that it agrees the investigation proposed by IPL is appropriate. However, EPA goes on to provide a critique on a preliminary assessment that is based on an evaluation IPL has already

[79] Proposed Decision at 55.
[80] Proposed Decision at 55.
[81] Proposed Decision at 58.
[82] Proposed Decision at 55.
[83] Proposed Decision at 61.

identified as ongoing, which as stated above was not feasible to complete in the timeframes required by the CCR Rule.

In addition, the ACM is not a comparative document intended to assess the merits of one alternative against the merits of another, but to assess each alternative against the criteria in 40 CFR 257.96(c). The ACM addendum meets this requirement. The comparison of one alternative to another is conducted during the remedy selection process, which will build on the preliminary assessment in Table 5 of the ACM addendum. This is not a novel approach. In the absence of any direction from EPA on how to complete the ACM process within the context of the CCR Rule, IPL developed the conceptual site model and scoring approach based on multiple guidance documents that are used for similarly situated sites, including:

- ASTM E1689-95 - Standard Guide for Developing Conceptual Site Models for Contaminated Sites
- Federal Remediation Technologies Roundtable (FRTR), (2020), Technology Screening Matrix
- United States Environmental Protection Agency (EPA), (1998) "Solid Waste Disposal Facility Criteria Technical Manual (EPA530-R-93-017)
- EPA (2007). "Monitored Natural Attenuation of Inorganic Contaminants in Groundwater, Volume 1 – Technical Basis for Assessment, (EPA600-R-07-139).

(iii) *Inaccurate statements* – EPA comments on some specific aspects of the evaluation of alternatives, including CCR in contact with groundwater and MNA evaluation, and goes on to state "The revised ACM does not assess the corrective measures in a manner that provides an appropriate basis to select a remedy."[84] As discussed above, the ACM provided a preliminary assessment of potential remedies, but it does not (and is not required to) select a remedy.

EPA concludes its comments on the ACM by stating that "the assessment of all control measures, including MNA, must be based on site-specific data that support conclusions about their performance."[85] IPL agrees with this statement and continues to obtain site-specific data to assess the alternative control measures and complete the selection of remedy.

V. Proposed Date to Cease Receipt of Waste

EPA is proposing to agree with IPL's position that if IPL were unable to continue using the OGS Ash Pond, and if no other on- or off-site alternative capacity were available, there would be adverse impacts on IPL's ability to operate the plant.[86] However, EPA disagrees that there will be any broader impacts of such an outage. EPA appears to believe that MISO has excess reserve margin and thus an unplanned shutdown of OGS would not result in reliability concerns. Notwithstanding the information above, where IPL explains that OGS expects to permanently cease placement of CCR and non-CCR wastestreams in the OGS Ash Pond by May 1, 2022, IPL

[84] Proposed Decision at 63-64.
[85] Proposed Decision at 64.
[86] Proposed Decision at 25.

disagrees with EPA's assessment of reserve margin in the MISO system and EPA's conclusions regarding local and regional reliability.

EPA's reliance on the MISO system's excess reserve margin to discount reliability concerns is flawed because it does not reflect the most current approach for assessing overall grid reliability, such as reliability in all hours in the year. MISO's Reliability Imperative[87] discusses these issues in depth, including the limitations of the current resource adequacy construct, which assesses only summer peak reserve margin, as the generation portfolio evolves towards renewables and retirement of thermal units. In fact, MISO has submitted a seasonal construct to FERC to address seasonal concerns that can lead to system disruption. Suspending OGS operations would inherently cause further reliability risk by removing a dispatchable resource from the system. IPL respectfully points EPA to MISO's comments,[88] which explore these issues further.

IPL is also concerned about the process that EPA has proposed for coordinating with MISO on a planned outage or suspension. First, EPA does not elaborate on what it means by "formal reliability assessment(s) conducted by MISO" and "finding of technical infeasibility for demonstrated reliability concerns." IPL is concerned that EPA may second-guess a conclusion by MISO that a planned outage or suspension at OGS presents unacceptable reliability concerns, similar to how EPA has questioned QPE certifications. Second, the timing within a MISO Planning Year must be considered during coordination of a planned outage or suspension; under MISO rules, any unit that is out for 90 of the first 120 days of the Planning Year cannot participate in the annual resource auction and receive accredited capacity for that year.

With respect to EPA's proposed 135-day timeframe to cease the placement of CCR and non-CCR wastestreams in unlined ash impoundments, IPL agrees this conforms to the duration between the deadline for submitting the Demonstration (November 30, 2020) and the regulatory deadline to cease receipt of waste (April 11, 2021), and that it should normally provide adequate time to schedule a planned outage in coordination with MISO. However, the 2015 rule provided owners or operators of existing surface impoundments six months to cease receipt of waste once a closure trigger was identified under 40 CFR 257.101(a) or (b). For consistency with other closure timeframes, IPL believes that providing six months to cease wastestreams and initiate closure, rather than the 135-day timeframe suggested in the proposed decision should EPA opt to issue a denial, would be more consistent with the timing of the CCR Rule.

[87] https://www.misoenergy.org/about/miso-strategy-and-value-proposition/miso-reliability-imperative/
[88] See comments dated February 23, 2022 from Midcontinent Independent System Operator (MISO) within this docket (EPA-HQ-OLEM-2021-0593).

CONCLUSION

The federal CCR Rule was established to provide for the safe operation of CCR units and for the proper disposal of CCR in surface impoundments and landfills. IPL takes these objectives seriously and has consistently acted to comply with the Rule's requirements. IPL's actions at OGS to discontinue placement of CCR and non-CCR wastes in the OGS Ash Pond, to plan for closure of the unit, and to address groundwater impacts demonstrates an ongoing commitment to compliance and environmental stewardship.

As explained above, EPA's proposed decision to deny IPL's request for an extension to use the OGS Ash Pond while implementing these plans is based on analyses of the Rule's requirements and assessment of the available technical information that are inconsistent with past interpretations, untimely with regard to compliance obligations, procedurally flawed, and incorrect. IPL respectfully requests that EPA reconsider the proposed denial and instead approve OGS' application in full.

Respectfully submitted,

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