**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

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| **In the Matter of:** | **)** | |
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| **AMEREN ASH POND CLOSURE RULES** | **)** | **R09-21** |
| **(HUTSONVILLE POWER STATION)** | **)** | **(Rulemaking – Land)** |
| **PROPOSED: 35 ILL. ADM. CODE PART** | **)** | |
| **840.101 AND 840.144** | **)** | |

**PRE-FILED TESTIMONY OF MICHAEL BOLLINGER**

## I. INTRODUCTION

My name is Michael F. Bollinger. I am testifying on behalf of Ameren Electric Generating Company ("Ameren"). I am a Principal Environmental Scientist in the Environmental Services Department ("ESD") of Ameren Services Company. ESD provides environmental support services to Ameren Corporation's generating and utility operating subsidiaries. I work in the Water Group, and among my duties I provide assistance to Ameren's power plants with respect to federal and state (Missouri and Illinois) permitting requirements as well as a variety of water quality compliance and regulatory issues that impact Ameren's fossil and hydroelectric power plants. I have been the primary technical lead on the Hutsonville Power Station Pond D closure project since 1997. Prior to the formation of Ameren Services, I worked for Union Electric Company (n/k/a AmerenUE) commencing in September, 1981. I hold a Bachelor of Science degree in Environmental Chemistry and Master of Public Health degree, in Environmental and Occupational Health.

## II. BACKGROUND

### A. *Background of Hutsonville Station Pond D Closure*

Ameren Corporation was formed following the 1997 merger of Union Electric Company and Central Illinois Public Service Company ("CIPS"). After that merger, Ameren resolved an enforcement case (PCB 97-26) with the State of Illinois pertaining to alleged groundwater contamination associated with an ash impoundment at CIPS's Hutsonville Power Station known as "Pond D".[1] As part of that 2001 settlement, Ameren committed to investigate groundwater conditions associated with Pond D, remove the impoundment from service, and initiate closure in accordance with "applicable regulatory requirements." Because there are no specific requirements governing the closure of ash ponds, establishing the regulatory parameters governing such closure has proven to be extraordinarily challenging.

The Hutsonville Power Station ("Hutsonville" or the "Station") now owned and operated by Ameren and one of the oldest in the Ameren system, dating to World War II, is located in southeast Illinois and is adjacent to the Wabash River which forms the border between Illinois and Indiana. The plant is located in rural Crawford County and surrounded mostly by farmland. The Wabash River forms the eastern border of the Hutsonville Power Station site, and Pond D is located on the bend of the Wabash River. There are very few undeveloped areas of the plant property, and the site is filled with a variety of physical and operational features such as the power house building, transmission lines and substations, security fencing, coal yards, access roads, storage and parking lots, piping systems, and a series of impoundments. Groundwater usage in the immediate area down-gradient of the Station includes irrigation associated with the

[1] Hutsonville is now owed by Ameren Energy Generating Company, a non-rate regulated generating company that is a subsidiary of Ameren Energy Resources. All of the Ameren companies are subsidiaries of Ameren Corporation.

neighboring farms and plant wells. The township of Hutsonville is served by a public water supply system that draws water from the deep alluvial aquifer within the Wabash River valley, approximately three quarters of a mile south of Pond D.

All conventional coal-fired power plants generate fly and bottom ash as a byproduct of the coal combustion process. At Hutsonville, ash collected from the boilers or electrostatic precipitators is managed through a series of surface impoundments that comprise the Station's waste water treatment system. The plant draws water from the Wabash River through a circulating water system that is used in cooling and ash sluicing equipment systems. Coal combustion waste is sluiced to a series of ponds where it settles. The impoundment system has expanded over time and presently consists of four ponds: bottom ash[2], fly ash (Pond A), drainage collection (Pond C) and final (Pond B). Ponds A, B, and C are lined structures and are used to manage the various waste streams from the plant. Fly ash settles in Pond A (built in 1984), and sluice water decants from pond to pond before discharging to the Wabash River through a NPDES permitted outfall. Discharges from the impoundment system are subject to various permit conditions and requirements set forth in the Station's NPDES permit (IL0004120). Ponds A, B and C are also subject to requirements set forth in an Operating Permit including monthly groundwater monitoring for specified constituents. Ameren has been monitoring groundwater for constituents such as boron from wells near Ponds A and D since 1984 and 1999, respectively.[3]

[2] Bottom ash is reclaimed regularly and used by county and state transportation departments.

[3] In 2005, the State Operating permits were consolidated into one, single permit (2005-EO-3689), which expires May 31, 2010. Special Condition 6 of that permit requires MW 6 through 9 to remain operational and sets forth monthly monitoring requirements for MW 1 through 5. Monitoring results are submitted on a yearly basis to the Agency.

Pond D was constructed in 1968 and, as such, predates most environmental regulations. At the time of construction, there were no environmental standards that pertained to the engineering or design standards applicable to ash impoundments. Accordingly, Pond D was constructed from native soil materials. Its tallest embankment is approximately 22 feet high. The impoundment is unlined. For more than thirty years it functioned as the Station's primary ash impoundment. As part of the resolution of the enforcement case, Ameren initiated in 1998 an extensive hydrogeologic assessment of Pond D and the site, and in 2000 constructed supplemental impoundments (Ponds B and C) so as to remove Pond D from service. By re-directing sluice waters through the other ponds, Ameren was able to isolate Pond D and removed it from active service as a wastewater treatment basin. Over time, surface water has evaporated, and Pond D has further dewatered due to subsurface seepage

Based upon coal burn estimates from the plant, aerial surveys and exploratory borings, Ameren believes that Pond D contains in total nearly a million cubic yards of ash with approximately one-third of this volume (280,000 cubic yards) lying below the water table. Following Agency authorization, some of this material (approximately 200,000 cubic yards) was moved to Pond D after it was taken out of service to assist in the establishment of an acceptable final grade and as a cost-effective means of maintaining settling capacity within Pond A. Ameren anticipates that as part of final closure additional materials, including ash, may be needed to establish a final slope and grade of the impoundment.

B. *Regulatory Proposal Background.* Ameren filed this proposal for a site-specific rulemaking to close Pond D with the Illinois Pollution Control Board ("Board") on or about May 19, 2009, but this path was not clear from the beginning. In fact, for the last decade Ameren has been trying to define the appropriate regulatory requirements for the closure of Pond D. There

are no rules that specifically govern how to close an ash pond. Existing regulations addressing waste, waste hauling, and landfills do not sufficiently address the closure of surface impoundments such as Hutsonville wherein the ash material is intended to remain in place. More importantly existing landfill regulations impose requirements that cannot be met given the fact that ash ponds that pre-date modern landfill requirements are designed and regulated during their active service as water treatment facilities in connection with the management of coal combustion waste associated with coal-fired power plants. Ash ponds are unique and, therefore, a site-specific rule is needed.

## III. TECHNICAL SUPPORT DOCUMENT[4]

Following the resolution of the enforcement action and as part of efforts to evaluate Pond D, Ameren retained the services of a hydrogeologist, Bruce Hensel, formerly of STMI and now employed by Natural Resource Technology "NRT," to perform a variety of technical assessments and field tasks consistent with the norms and professional practices of such assessments. Mr. Hensel performed a hydrogeology site assessment to define the geologic conditions of the aquifer(s) underlying the site. He also determined groundwater flow and installed additional permanent and temporary wells to further delineate the extent of groundwater impacts associated with Pond D. In addition, Ameren evaluated the effectiveness of various potential closure alternatives. Those studies confirm that exceedances of Class I Groundwater Quality Standards ("Class I Standards") occur in the shallow groundwater immediately beneath and adjacent to Pond D. However, such impacts are largely localized and monitoring wells

[4] Many of the reports that comprise the TSD were prepared initially in support of the adjusted standard Ameren sought. They have been modified to conform to the filing requirements for this site specific rulemaking and provide the technical support for this rule.

screened in the deep alluvial aquifer comply with Class I Standards. These reports are included in the Technical Support Document ("TSD").

A. *NRT*: As part of Ameren's TSD, Bruce Hensel, based on his professional expertise, has produced several reports including the following: Groundwater Monitoring Program, Hydrogeologic Assessment, Groundwater Modeling Memorandum, and a Pond D Closure Alternatives Report.

1. Groundwater Monitoring Program (Chapter 10 of the TSD): NRT's groundwater monitoring plan provides an example of the monitoring program Ameren intends to submit as part of the site closure plan. I will talk about this in more detail below when I discuss this section of the proposal.

2. Hydrogeologic Assessment (Chapter 6 of the TSD): This assessment was performed in 1998-1999 and evaluates soil, leachate, and groundwater samples collected to characterize the geology, groundwater flow, and groundwater quality at the site. The report also delineates the extent of groundwater impacts associated with Pond D.

3. Groundwater Modeling Memorandum (Chapter 8 of the TSD): The groundwater modeling memorandum describes the modeling used to determine the extent and predicted duration of off-site migration of boron above Class I Standards. Boron was chosen because it is an indicator parameter for coal ash leachate and is highly mobile. The results of this modeling form the basis for establishing (1) the boundaries of Ameren's designated zones, Zones A and B; (2) the extent to which off-site concentrations exceed Class I Standards; (3) the reduction in boron loading to the Wabash River under the proposed closure scenario; and (4) the effectiveness of the selected closure activities for Pond D.

The boundaries of Ameren's proposed zones are shown on page 6 of the TSD. The modeling estimates that contamination above Class I Standards extends approximately 500 feet south of the southern property line. Under the proposed closure scenario, NRT's modeling analysis predicts that boron concentrations will be below Class I Standards within approximately 10 years of the installation and operation of the collection trench which is discussed in more detail below. The results of the calculation of boron loading rate in groundwater discharge to the Wabash River and tributaries indicate that an 84 percent decrease in loading rate has occurred since dewatering and a cumulative 97 percent decrease relative to the calibrated rate of boron loading is expected to occur one year after the cap is installed.

4. Pond D Closure Alternatives Report (Chapter 5 of the TSD): This assessment identifies various alternatives screened by Ameren in determining a technologically feasible and cost-effective closure plan for Pond D. Various groundwater management and final cover alternatives were screened. Ultimately, Ameren selected the following alternative: (1) installation of a collection trench to intercept shallow groundwater flow at the Station's southern boundary; (2) installation of a geosynthetic membrane cap with a 3-foot thick final protective layer of soil in accordance with established and commonly accepted performance criteria; and (3) the management of storm water runoff by routing surface water east and west towards the Wabash River. I will discuss the closure scenario in more detail below.

B. *AECOM*: In preparation for filing this proposal for site-specific rulemaking, Ameren retained Lisa Bradley of AECOM, Inc. to perform a risk assessment in conformance with industry standards to evaluate the risks of the selected closure option to human health and the environment under current and reasonably foreseeable future conditions and land uses. Dr. Bradley's assessment was performed in conformance with industry standards and concludes that

the closure plan and associated activities (including keeping the ash in place) coupled with the agreed-upon groundwater use-restrictions will be protective of human health and the environment.

## IV. GROUNDWATER MONITORING SYSTEM

Since 1984 and as part of requirements set forth in the Station's Operating permit(s), Ameren has monitored groundwater quality at the Station through a monitoring well network. In 1998, 2001 and 2004 Ameren installed additional groundwater monitoring wells in order to define groundwater impacts associated with Pond D. Wells were installed at various locations around Pond D to delineate impacts within the shallow and deep aquifers. In addition, geoprobes were used to gather additional data from Pond D and on property to the south owned by an adjacent landowner. While certain wells are monitored as part of express permitting conditions, other wells are presently monitored on a voluntary basis.

Because the monitoring system is tailored to the groundwater impacts from Pond D, it is appropriate for performing the hydrogeolic site assessment required by Section 840.108. In particular, the system consists of a total of 11 wells. Two wells (MW-1 and MW-10) provide up-gradient data for the upper migration zone. Of the remaining nine wells, five are finished in the deep alluvial aquifer and four are located in the upper migration zone, all down-gradient of Pond D. The locations of these wells is sufficient to delineate and monitor the extent of the groundwater impacts associated with Pond D because they provide comparison between up and down-gradient water quality data for the upper migration zone. There are no up-gradient wells finished in the deep alluvial aquifer because there are no suitable locations on Ameren's property for such wells. Water quality data from the deep alluvial aquifer consistently demonstrates compliance with Class I Standards and we believe that the vertical migration of groundwater is

restricted by a confining layer between the upper migration zone and deep alluvial aquifer. Although trace levels of boron have been detected in the deep alluvial aquifer (at MW 14), such levels still comply with the applicable groundwater quality standard.

To evaluate post-closure groundwater quality and trends, Ameren proposes to sample no fewer than three down gradient wells from its existing monitoring well system pursuant to Section 840.110. The proposal provides that all wells will be properly installed to maintain the integrity of the bore holes, ensure proper sampling and protect against tampering and damage. In addition, for purposes of completeness, the proposal provides for the design and construction of the wells consistent with industry practices, for their location, and for sample collection and analysis. These standards are consistent with protocols and practices utilized by Ameren in submitting groundwater monitoring data to the Agency as part of its ongoing compliance obligations with respect to the Station's Operating and NPDES permits. Furthermore, all wells will be sampled in accordance with a quality assurance program to ensure reliability of the results.

All of the wells that have been installed on the property comply with the proposed requirements and Ameren does not have authority to install monitoring wells offsite. Therefore, the rule provides Ameren with the authority to rely on the existing monitoring wells (which it intends to do) and does not require Ameren to install monitoring wells offsite.

## V. GROUNDWATER MONITORING PROGRAM

Since 1984 and as part of its permitting requirements, Ameren has monitored groundwater for the following constituents: boron, iron, sulfate, manganese, pH, and TDS. Ameren would continue monitoring for these constituents pursuant to Section 840.112 because an established database exists upon which to evaluate future trends. Boron and sulfate in

particular are considered primary indicators of coal ash leachate due to their consistently high concentrations in coal ash leachate, persistence in the environment, and mobility in groundwater. In addition, at the Agency's request, Ameren included monitoring requirements for additional inorganic constituents to ensure the effectiveness of the proposed closure activities.

The monitoring program allows for monitoring to decrease in frequency depending on the results of data analyses. This schedule will provide sufficient data to monitor the effectiveness of the proposed closure activities in light of the fact that groundwater modeling suggest groundwater impacts off-site will come into compliance with Class I Standards in approximately 10 years.

An example of a ground water monitoring program Ameren is considering is set forth in Chapter 10 of the TSD.

## VI. CLOSURE ALTERNATIVES CONSIDERED

Ameren's proposed closure plan follows an extensive period of investigation and analysis and is designed to ensure protection of human health and environment by addressing and mitigating groundwater impacts. Groundwater impacts are highly localized and after implementation of the activities outlined in the proposed rule, will eventually be limited to groundwater underlying the plant's property boundary. In the meantime, groundwater usage of the shallow aquifer immediately south of the plant property will be controlled through a legally enforceable restriction. Accordingly, there is no pathway of exposure that poses an unacceptable risk to human health or the environment.

Before settling on its closure alternative, Ameren consider and rejected the feasibility of removing the ash material from Pond D. Costs associated with ash removal and off-site disposal are exorbitant. Furthermore, it is unlikely that the removal of such a large volume of material – a

third of which lies bellow a water table that rises and falls with the river – is technologically feasible. Removal of approximately 950,000 cubic yards of ash from Pond D creates monumental challenges. The saturated ash alone would require unconventional excavation techniques, such as dredging or mechanical sluicing (*i.e.*, mudcat auger excavation) and dewatering prior to transport to an off-site waste management facility. The physical configuration of the site and the narrow access around Pond D make it virtually impossible to implement these unconventional excavation and dewatering techniques. The cost of excavation and off-site disposal is estimated at approximately $34 million (2005 dollars). Therefore, this alternative is not a viable option due to the technical uncertainties and the high cost compared to other management alternatives.

Ameren also considered additional potential technologies or alternatives. Those alternatives are addressed in the TSD, and I will briefly touch on a couple of alternatives for illustrative purposes. Ash stabilization is a technology designed to micro-encapsulate the ash in a cement-like matrix to minimize the rate of groundwater infiltration and leaching of ash constituents to groundwater. Once the ash is stabilized, groundwater flows around, rather than through, the ash. However, there is a high degree of uncertainty as to the effectiveness of the technology. It is very hard to maintain the continuity and integrity of the cement-like matrix. The costs associated with ash stabilization are estimated at approximately $20 million (2005 dollars). Therefore, this alternative was not considered beyond a preliminary screening phase because of the technical uncertainties and high cost compared to other alternatives.

Reconstruction of Pond D to include a low-permeability liner is costly and would not be feasible for the same reasons that off-site disposal is not feasible. Reconstruction would require extensive excavation and relocation of all ash currently contained in the pond. Because of the

lack of space to temporarily store the ash on-site, all of the ash would have to be either temporarily stored off-site or disposed of off-site. As discussed above, the cost of excavation and off-site disposal is approximately $34 million (2005 dollars). Because this alternative has the same feasibility issues as removal and off-site disposal, detailed costs associated with this option were not evaluated, and this alternative was not considered further due to technical uncertainties and the high cost compared to other groundwater management alternatives.

## VII. GROUNDWATER MANAGEMENT ALTERNATIVES CONSIDERED

Groundwater migration from Pond D does not pose a risk to human health and the environment. Impacts are localized and will attenuate over time. Furthermore, as noted in the recently issued NPDES Permit for Ameren's Duck Creek facility, both the Board and the Agency have recognized that there is no viable treatment process to remove boron from water. The high costs and technical challenges of treating water to remove boron have also been discussed at length in a rulemaking currently pending before the Board. City of Galva Site-Specific Water Quality Standard for Boron Discharges to Edwards River and Mud Creek: 35 Ill. Adm. Code 303.447 and 448, R09-11, (Jun. 18, 2009). Without a viable treatment alternative for boron, remedial options for CCB waste materials are limited. With respect to groundwater management approaches to contain offsite migration, Ameren considered the following:

A. *Groundwater Collection Trench.* The groundwater collection trench is the chosen groundwater treatment mechanism and is discussed in detail below.

B. *Slurry Wall.* Ameren investigated constructing a low-permeability barrier wall around Pond D to prevent lateral migration of impacted groundwater. Construction of a slurry wall is dependent upon keying into a geologic formation with low hydraulic conductivity, such as shale bedrock or clay that would prevent vertical migration of contaminants. The sandstone

bedrock beneath the western portion of Pond D does not provide a sufficient key-in layer for an impermeable barrier wall. This alternative is, therefore, technically infeasible.

## VIII. PROPOSED CLOSURE SYSTEM

The proposed rule provides for the existing ash to remain in place, yet borrows methods for measurement and performance criteria from the Landfill Regulations where appropriate.

A. *Geosynthetic Membrane.* As set forth in Section 840.124, Ameren selected a geosynthetic membrane cap and final cover system that is protective of human health and the environment. Ameren chose the geosynthetic membrane cap because the cost is consistent with other low-permeability layers, it is more effective at minimizing infiltration than many of the other options, and its use has already been approved in other board regulations as being protective of human health and the environment.

B. *Final Slope and Stabilization.* Section 840.122 requires all final slopes to be designed and constructed to support vegetation and drain runoff to meet the stability criteria of 35 Ill. Adm. Code 811.304. As part of closure design, Ameren will perform a structural stability analysis to determine such factors as the level of saturation and the density of materials comprising the pond's embankments. Final slope, and loading factors will be designed depending upon the results of the stability analysis. The stability analysis and critical elements of closure design will be performed under the supervision of Ameren's Dam Safety Group, which is responsible for ensuring the structural stability of impoundments located throughout the Ameren system. In addition, storm water drainage and outfalls will be designed to ensure that proper drainage occurs post-closure.

Ameren also proposes to use, if necessary, coal combustion waste from Pond A as part of that final grading and slope. Such material would be placed a minimum of ten feet above the

water table and would be covered with the geosynthetic liner thereby preventing the creation of leachate from the coal combustion waste and thus protective of the environment. The use of coal combustion waste in this manner is consistent with material already located in Pond D and would represent a cost-effective and less wasteful alternative to bringing in fill material for sloping purposes.

C. *Final Cover*. The final protective layer covering the geosynthetic membrane will consist of soil material and be at least three feet thick or the thickness necessary to protect the low permeability layer from freezing and to provide for adequate root penetration to support vegetative growth. The membrane and final cover will minimize any infiltration of water due to precipitation and will route surface water from the site to the Wabash River. The final cover will be vegetated to stabilize this layer and minimize wind and water erosion.

D. *Groundwater Collection Trench.* The groundwater collection trench required by Section 840.118 will contain a perforated horizontal pipe surrounded by gravel bedding. It will be located along the south property boundary from approximately the location of MW 14 and proceeding west towards Pond A. Ameren anticipates that the trench will be installed at depths sufficient to intercept groundwater flow within the shallow aquifer before it leaves the property. The installation and operation of the trench will allow historically impacted groundwater underlying the adjacent off-site property to attenuate. Impacted groundwater collected in the trench will be routed to Pond B where it will mix with sluice waters and other plant wastestreams before eventual discharge to the Wabash River. This groundwater management option was chosen because it is capable of preventing off-site migration of impacted groundwater in the upper migration zone, the cost is reasonable, and it is more effective than the other groundwater management options considered.

On a related issue, the proposal requires Ameren to file a NPDES renewal application for Pond B within 180 days of the proposed rule becoming effective to obtain authorization for the addition of the groundwater that will be collected by the trench and routed to Pond B prior to discharge via the Station's existing NPDES permitted outfall. The Station's NPDES permit IL0004120 boron effluent limits for Outfall 2 is 10 mg/l. As discussed in the TSD at Chapter 12, water from the collection trench is not expected to appreciably increase concentration levels and any subsequent discharges are expected to be below current NPDES limits.

E. *Groundwater Use Restriction.* As an added precaution, Ameren has entered into an agreement with the adjacent landowner to restrict the use of shallow groundwater at the northern-most edge of the property where we believe there may be limited off-site impacts above Class I Standards from Pond D. Specifically, as set forth in Chapter 9 of the TSD, the agreement restricts the neighbor's groundwater use within the first 25 vertical feet of the water table and extending 500 feet south of the Hutsonville Station property boundary.

Groundwater modeling indicates that the past dewatering together with the future geosynthetic membrane cap and groundwater collection trench will result in a dramatic improvement of groundwater quality south and down-gradient of Pond D. Groundwater quality as measured in wells located on Ameren's property are expected to come into compliance with Class I Standards within approximately 7-12 years. Preliminary budgetary estimates of capital costs of the geosynthetic membrane cap plus installation of the groundwater collection trench are approximately $4 million. Annual operating and maintenance costs associated with the trench and final cover system are expected to be fairly nominal, around $50,000 per year. Therefore, the proposal is technically feasible and economically reasonable and protective of human health and the environment.

## IX. COMPLIANCE ZONES

Historical operations of Pond D have impacted groundwater. Ameren has used the results of groundwater modeling and monitoring to determine the extent of the groundwater impacts from the operations of Pond D and to delineate these areas into two regions: Zone A and Zone B. Zone A is located on property owned and controlled by Ameren and encompasses the region of the aquifer impacted by Pond D. Zone B extends to the south of Zone A and encompasses property outside of Ameren's ownership and control. Groundwater usage within Zone B is controlled by virtue of a legally enforceable use restriction agreed to by the adjacent property owner. Since historic operations of Pond D have already impacted groundwater, as set forth in Section 840.114, compliance with Class I Standards is not feasible and the creation of Zones A and B is an accepted concept in addressing groundwater impacts from historic operations and is consistent with Board land and water regulations and the Agency's voluntary remediation programs. Under the proposal, no groundwater quality standards apply within Zones A and B. However, to ensure that the closure plan is protective of human health and the environment, Section 840.116 requires annual trend analyses to be performed at no fewer than three wells. Ameren will identify in the closure and post-closure care plans the monitoring wells at which trend analyses will be performed. This way, the closure and post-closure care plans can be updated when necessary to account for new or replacement wells that may be necessary for monitoring and evaluating groundwater quality. The use of a trend analysis is consistent with an approach suggested by the Agency prior to the filing of this rulemaking and will allow Ameren to evaluate offsite impairment.

If the results of trend analyses show a statistically significant increasing trend of concentrations being monitored, Ameren will perform an investigation to determine the cause. If

the cause is something other than Pond D (e.g. elevated levels attributable to background), then Ameren is required to notify the Agency of the superseding cause. If the investigation determines that the increasing trend is a result of Pond D and monitoring frequency has been reduced, then Ameren must perform quarterly sampling. After four consecutive quarterly samples show no statistically significant increasing trend, sampling frequency may return to either semi-annual or annual, whichever may be the case.

If a statistically significant increasing trend attributable to Pond D continues over a period of two or more consecutive years, Ameren must perform additional investigations to determine the extent of the impact and the effectiveness of the closure activities. Such investigation could include more frequent inspections of the surface of the cover system, additional sampling of the monitoring wells, installation of additional wells, or one-time sampling of groundwater at other points. If Ameren concludes from the investigation that any monitored constituent will exceed Class I Standards applicable outside of Zone B, Ameren will take appropriate action based upon those supplemental investigations.

## X. CLOSURE AND POST-CLOSURE PLANS, CERTIFICATIONS, AND MAINTENANCE

The proposal requires Ameren to prepare and submit to the Agency closure and post-closure plans that memorialize the closure and post-closure activities. In addition, to ensure protection of human health and the environment, the proposal requires a professional engineer certify that Pond D has been closed in accordance with the applicable closure plan, and Section 840.134 requires Ameren to periodically inspect and repair the cover system.

## XI. CONCLUSION

Again, Ameren proposes this rule to cover a gap in the Board's existing solid waste regulations to allow for the site-specific closure of Pond D at the Hutsonville Power Station. Ameren has carefully crafted this rulemaking proposal, tailoring it specifically to the unique attributes of Pond D and the surrounding land use, site geology, and hydrogeology. Ameren has spent years tackling the very difficult issues presented by closing ash ponds under the existing Illinois regulatory scheme and, in particular, by the unique characteristics surrounding Pond D. I truly believe that the closure scenario we are presenting to you in this proposal is the most protective combination of closure alternatives investigated that is economically reasonable and technically feasible for Ameren to implement at Hutsonville Power Station.