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Sent via email to laban.c.lindley@illinois.gov

Laban Lindley
U.S. Army Corps of Engineers, Louisville District
Indianapolis Regulatory Office
8902 Otis Avenue, Suite S106B
Indianapolis, Indiana 46216

RE: River Bank Stabilization Project along the Middle Fork Vermilion River; Vermilion Site; 10/5/2015 Joint Application #LRL-2008-1366 at Dynegy's coal ash storage facility

Dear Laban Lindley,

These comments are submitted on behalf of Prairie Rivers Network regarding the proposed River Bank Stabilization Project for the Vermilion Power Station, submitted by Dynegy Midwest Generation for joint review and approval by the National Park Service (NPS), US Army Corps of Engineers (USACE), Illinois Department of Natural Resources (IDNR), and Illinois Environmental Protection Agency (IEPA).

Prairie Rivers Network (PRN) is the state affiliate of the National Wildlife Federation, a non-profit organization that strives to protect the rivers, streams and lakes of Illinois and to promote the lasting health and beauty of watershed communities. Many of our members live and recreate in the Vermilion River watershed and continue to be at risk due to pollutants leaching from the onsite ash pits.

We recognize and appreciate ongoing collaboration between the National Park Service, US Army Corps of Engineers, Illinois Department of Natural Resources, and Illinois Environmental Protection Agency to evaluate a new bank stabilization project along Illinois' only National Scenic River, the Middle Fork of the Vermilion River.

The purpose of this letter is to share our general concerns about the project, while providing a background and basis for our specific concerns. We intend to continue evaluating these concerns through future FOIA requests and formal comments that may be directed to each relevant agency.

Overview

Dynegy's pending proposal contained within Joint Application Form LRL-2008-1366 constitutes a short-term deferral of the ongoing risk posed by the irresponsibly sited coal ash disposal facility. Failure of embankments holding back coal ash would be a tragedy for the Middle Fork of the Vermilion River, the people and businesses who treasure the river, the wildlife that depend on the river, and the reputation of the State of Illinois, charged with protecting its only nationally-designated Scenic River.

Beginning with three joint application forms for IDNR Statewide #9 permits in 2008, Dynegy had documented concerns for erosion at the now-retired Vermilion Power Station.[1] The areas of their greatest concern were the high erosion locations at the pumping station and the banks to the east of the New East Ash Pond (NEAP).

- Stabilization measures at the pump station were approved and completed in 2011.

- Stabilization measures at the New East Ash Pit were proposed to include a gabion system to reinforce the banks (2008), and subsequently a bioengineering system (2009). Neither proposal complied with the National Wild and Scenic Rivers Act, and they were not approved.[2] Rather than modify the project to comply with the Act, Dynegy resubmitted the proposal for gabions in 2014, which was also not approved.[3]

After eight years of proposing the same, unacceptable solution, Dynegy is now expressing alarm at the rate of erosion at the NEAP – resubmitting the bioengineering stabilization plan in October 2015.[4] The proposal outlines the installation of a stone toe protection, backfilling, and live pole planting along 485 feet of the riverbank.

Erosion at the riverbank of the NEAP is undoubtedly alarming. Nevertheless, the parties to this decision are at a critical juncture for consideration of the future of this site.

As the owner and operator of the facility, Dynegy knowingly stored coal ash in the floodplain within the meander pattern of the Middle Fork of the Vermilion River. Rather than placing an undue burden of on Illinois taxpayers, the river ecosystem and economy that relies on it, as well

[1] Joint Application Form, Application Numbers 20092003, 20092004, and 20092005. Dated November 17, 2008. Retrieved via FOIA.
[2] SECTION 7(a) Final Review and Determination, Vermilion Power Station Bank Stabilization Project, Location 2, August 2010
[3] Email retrieved via FOIA. USACE to Dynegy. Subject: Dynegy – Vermilion Power Station – Location 2. Dated October 2, 2014
[4] Join Application Form, Application Number LRL-2008-1366. Dated October 5, 2015

as the regulatory agencies, Dynegy must be held accountable for implementing a long-term solution that comprehensively addresses risks at the facility.

Moving forward, there is a need for consideration of Dynegy's record managing the facility – including the history of neglecting upkeep and maintenance, as well as lack of care for the Middle Fork – alongside the inadequacy of the current proposal.

History of Neglecting Upkeep and Maintenance

During the Vermilion Power Station's operating lifetime, Dynegy failed to act as a diligent caretaker of the property.

Neglected Bank Maintenance

Illinois Power had originally installed gabions along the North and Old East ash ponds in 1980, yet failed to maintain them as they began to disintegrate the following decade. The present condition of the riverbank indicates that Dynegy's stewardship has also been minimal. The geofabric lining the banks is shredded. Wire cages have been corroded, releasing tons of rocks downstream and leaving the banks exposed to continuing erosion. The few surviving segments of gabions have been undercut, now slumping into the river. Meanwhile, the banks upstream and downstream of the remaining gabions are experiencing increased erosion.

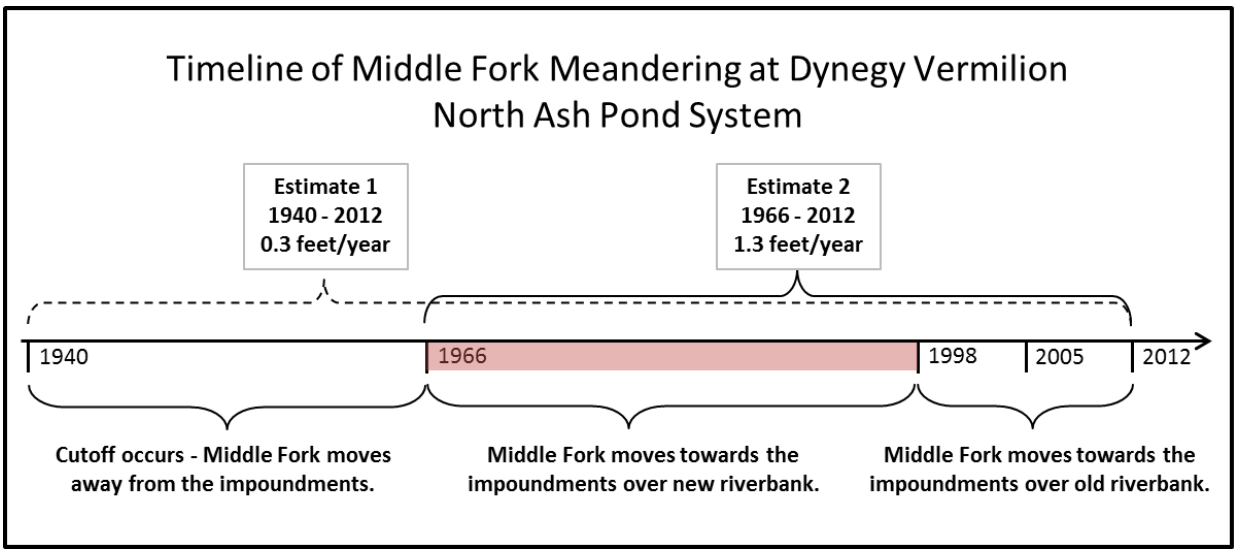
The gabions in question (some pictured below) remain in disrepair – shredded, slumping into the river, and in many places completely absent.

Given Dynegy's record of neglect of the old gabions, what action can agencies take to assure the public that Dynegy will monitor and maintain any new bank armoring installed at a retired plant?

Unrealistic Damage and Risk Assessment

As the New East Ash Pond deteriorates, Dynegy is expressing minimal concern for erosion along the North Ash Pond System. Erosion at this site was the subject of the 2014 Geotechnical Report which concluded that erosion is occurring at a rate of 0.3 feet per year.[5] This conclusion should be subject to further evaluation.

The Geotechnical Report's *0.3 feet per year* erosion rate is based on data spanning 1940-2012. This 72-year selection includes the river's migration away from the pond from 1940-1966, primarily due to the influence of a cutoff. Since 1966, however, the river has eroded exclusively toward the pond. The report estimates the erosion rate from 1966-2012 to be *1.3 feet per year*. The difference between these two estimates is explained in the figure below.



To justify choosing the *0.3 feet per year* (1940-2012) erosion rate in their time to failure calculations, the URS Corporation asserts that the erosion back towards the impoundments after 1966 was artificially fast, due to the effect of the cutoff. The argument is that the river would have been cutting back into a newer, less-compacted and less-vegetated riverbank which was deposited while it moved away from the impoundments. However, no analysis of whether or not the erosion in this period is in fact at a faster rate than other periods was documented.

[5] URS Corporation, Geotechnical Report North Ash Pond and Old East Ash Pond Vermilion Site Embankment Evaluations, Page 4-6 (November 18, 2013).

This argument fails to justify their choice of the *0.3 feet per year* erosion rate because both erosion rate estimates would include this asserted period of high erosion, so it does not provide reason to select one or the other. This is the only justification for choosing the smaller erosion rate of *0.3 feet per year*, and it is unsupported and illogical.

Therefore, the *1.3 feet per year* erosion rate should have been selected because it represents erosion in a single direction and it doesn't include the effects of an unpredictable one-time cutoff. The report states that no additional cutoffs are expected. Even if there were additional cutoffs expected, the effect of those cutoffs on erosion is extremely unpredictable, and it could just as likely increase erosion at this site. Accordingly, using the *1.3 feet per year* erosion rate estimate, the time to failure in the analysis would decrease from 83 years to about 20 years. This alone is substantial cause for concern.

Dynegy has Failed to Demonstrate Care for the River in Proposed Solutions

Dynegy's history of managing its facilities in the Middle Fork River floodplain has shown disregard for the river's recreational value and scenic beauty.

The photograph on the following pages shows the result of the approved stabilization work at the pump station, demonstrating extreme degradation to the river's scenic value.

The National Park Service's December 2010 *Wild and Scenic Rivers Act Section 7(a)* determination, permitting this project, stated that "[t]he River derives its scenic quality from its inconspicuous roads, forested conditions, bluff lines and largely undeveloped shorelines."

Nevertheless, the river's natural beauty has marred by this massive pile of bright white stone. Any management decisions must ensure that future actions better protect the river's scenic beauty.

Dynegy's Pending Proposal is Inadequate

In February 2016, Dynegy submitted a Streambank Stabilization Report in support of the 2015 application for 485 feet of bank armoring.[6] The report was prepared by SCI Engineering, INC., the same firm behind the design of the 2009 bioengineered proposal.

The 2016 SCI report fails, as the 2009 proposal did, to adequately consider the immediate degradation of the National Scenic River's recreational value and scenic beauty (as a result of bank stabilization actions), alongside the need to protect the river from a release of toxic coal ash.

Failure to State Design Life or Consider Impact

The report from SCI Engineering and Midwest Streams Inc. fails, in particular, to state the project design life or consider the impacts of ongoing maintenance operations. In absence of a coherent schedule – including ongoing maintenance and eventual removal of the riprap – the proposed bank stabilization project would permanently degrade the values of the river. As it stands, the project risks an outcome similar to bank armoring at the pump station, indefinitely obstructing the free-flowing nature of the river.

Application Pattern Averting Proper Regulatory Scrutiny

Additionally, Dynegy may be pursuing a strategy to minimize regulatory scrutiny – rather than confronting engineering realities. Dynegy's application to armor 485 feet of the bank falls conveniently short of the 500 feet threshold that would require an individual permit.[7] The motive of this application decision is particularly suspect considering the 2009 SCI streambank stabilization report admission that "the unstable bank continues downstream for approximately another 115 feet." [8]

The SCI report further asserts that "[b]y limiting the treatment to 485 ft. there will be a need to monitor the unstable area downstream to insure that the continued erosion downstream does not begin to cause damage" in which case "a second treatment reach would be needed." [9] Deferring assessment of the additional 115 feet of unstable bank would require an additional permit, another season of positioning construction equipment on the river, further removal of trees, and risk of spills and leaks. Despite these risks posed by a second period of bank stabilization, the 115 feet were left out of the permit application.

[6] 2009 Streambank Stabilization Report, SCI Enginering, INC. October 2009, Page 2
[7] Nationwide Permit 13 1.0(b)
[8] 2009 Streambank Stabilization Report, SCI Enginering, INC. October 2009, Page 2
[9] 2009 Streambank Stabilization Report, SCI Enginering, INC. October 2009, Page 2

Limited Bank Treatment May Contribute to Additional, Unanalyzed Risk

It is well known that engineered structures in river channels alter the meander pattern in ways that simply move erosion sites to another nearby location. Without constant monitoring and frequent interventions, armoring one segment of the bank will likely create a need for a series of similar projects – each posing equal or greater risk to the river's scenic and ecological values. Within the SCI draft report, downstream impact analysis is limited. Without supporting calculation or analysis, the report concludes that "because planted STP [Stone Toe Protection] will only be placed up to the OHWM [Ordinary High Water Mark], it is our professional opinion that this stabilization method will have little impact on downstream reaches."[10]

IDNR has made comments on this issue in their Contaminant Assessment Report dated March 14, 2016. The comments from Contaminant Assessment Report and the Planting and Seeding Recommendations (3/15/16) should both be adapted by the US Army Corp of Engineers as conditions of the permit. The Containment Assessment Report outlines the need for a more detailed engineering study to be conducted, as well as the inclusion of monitoring and water quality sampling in the plan. The problems outlined above should be addressed in the additional engineering study.

Inadequate Estimates of Flow Patterns

Finally, it is essential to acknowledge that the report makes unsupported assertions about flow patterns and velocities at various flood stages – providing no quantitative analysis of shear forces and scour potential of the kind that have destroyed earlier attempts to stabilize banks on Dynegy's property.

Conclusion

Prairie Rivers Network shares the agencies' concern for protecting the health and scenic beauty of the Middle Fork and its banks. As we work to avert failure of the coal ash impoundments, it is essential that any solution implemented considers the potential for long-term damage and the viability of long-term management.

A review of bank armoring measures installed over the site's operation illustrates the risk of ongoing stop-gap measures as new and old locations experience progressive erosion. The river can be expected to continue to meander between the bluffs, applying pressures to other unprotected parts of the impoundments and throughout the lifetime of protected portions.

Continued armoring of the entire bank in perpetuity is not only expensive, but unlikely to provide consistent protection. Moreover, it fails to address the central problem: the coal ash impoundments were built in the floodplain of a river that has demonstrated high erosive capacity.

[10] Streambank Stabilization Report, SCI Enginering, INC. March 2016, Page 4

The cost of relocation should be estimated alongside the alternative of bank stabilization projects, installed and managed for the entire half-mile of the Middle Fork adjacent to the ponds, in perpetuity.[11]

In closing, we ask that the collaborative agency effort ensures that any permitted action is part of a long-term solution, protecting the Middle Fork of the Vermilion River as well as the people and businesses that rely on it. Failure to require removal of coal ash from the floodplain and subsequently remediate the site risks catastrophic failure – and the related costs, which would fall on the Illinois taxpayer and local economy. We would like to work with each agency and Dynegy to ensure this happens.

Sincerely,

Andrew Rehn
Water Resources Engineer
Prairie Rivers Network

Cc:

Lisa Bonnett, Director of Illinois Environmental Protection Agency
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Thaddeus Faught, Illinois Environmental Protection Agency
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Louis Yockey, Illinois Department of Natural Resources
Tom Heavisides, Illinois Department of Natural Resources
Mike Diedrichsen, Illinois Department of Natural Resources
Cam Sholly, National Park Service
Hector Santiago, National Park Service

[11] United State Security and Exchange Commission, Form 10-Q, Dynegy Inc. Page 30. September 30, 2015