

ATTACHMENT I
Unstable Areas and Floodplains (845.340)

Memorandum

Date: 15 October 2021
To: Victor Modeer (Dynergy)
From: John Seymour, P.E. (Geosyntec Consultants); Omer Bozok, P.E.
(Geosyntec Consultants)
Subject: IEPA Part 845 – Unstable Areas and Floodplains Certification for New
East Ash Pond at Vermilion Power Plant
Geosyntec Project: CHE8404A

Dynergy Midwest Generation, LLC (Dynergy) is the owner of the inactive coal-fired Vermilion Power Plant (VPP), also referred to as Vermilion Power Station, located approximately 13 miles Northwest of Danville, Illinois. The New East Ash Pond (NEAP) is an inactive surface impoundment storing coal combustion residuals (CCR). The requirements for the NEAP are found in 35 Ill. Admin. Code 845, Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments (Part 845).

This certification addresses the requirements of Part 845, Section 845.340 Unstable Areas and Floodplains, which states.

Section 845.340 (a): An existing or new CCR surface impoundment, or any lateral expansion of a CCR surface impoundment must not be located in an unstable area unless the owner or operator demonstrates that recognized and generally accepted engineering practices have been incorporated into the design of the CCR surface impoundment to ensure that the integrity of the structural components of the CCR surface impoundment will not be disrupted.

Section 845.340 (b): The owner or operator must consider all the following factors, at a minimum, when determining whether an area is unstable: 1) On-site or local soil conditions, including but not limited to liquefaction, that may result in significant differential settling; 2) On-site or local geologic or geomorphologic features; and 3) On-site or local human-made features or events (both surface and subsurface)

Pursuant to Section 845.340 (b)(1), no conditions associated with the potential for significant differential settlement due to liquefaction were identified. A separate report prepared by Geosyntec titled “2021 CCR Initial Safety Factor Assessment, Part 845 – Sections 460, NEAP, Vermilion Power Plant” and dated October 2021 concluded that soils beneath the NEAP perimeter dike are not susceptible to liquefaction and significant differential settlement is unlikely.

Pursuant to Section 845.340 (b)(2), available United States Geological Survey (USGS) and Illinois State Geological Survey (ISGS) information indicates that no karst topography or physiographic features such as sinkholes, vertical shafts, caves, large springs exist at the site. To evaluate the susceptibility of landslides, we reviewed readily available USGS data. The USGS data indicates that the CCR Unit is in an area of low landslide incidence and the closest documented landslide is more than 11 miles from the CCR Unit. Accordingly, it is our opinion that the CCR Unit is not located in an area that has high susceptibility to landslides.

Pursuant to Section 845.340 (b)(3), evidence of on-site or local human-made features or events (both surface and subsurface) was examined. It was concluded that there had been coal mining activities potentially around the perimeter of NEAP prior to construction of NEAP. A geophysical investigation was conducted at the site to identify underground void spaces. A few localized voids and potential voids were identified around the perimeter of the CCR unit. Inspection of the ground surface in these areas is included in the inspection procedures. No evidence of ground subsidence has been identified around the NEAP or on the eastern berm since operations started at the NEAP.

Section 845.340 (c): An existing or new CCR surface impoundment, or any lateral expansion of a CCR surface impoundment, must not be located in a floodplain unless the owner or operator demonstrates that recognized and generally accepted engineering practices have been incorporated into the design of the CCR surface impoundment to ensure that the CCR surface impoundment will not restrict the flow of the base flood, reduce the temporary water storage capacity of a floodplain, or result in washout of CCR, so as to pose a hazard to human life, wildlife, or land or water resources.

The NEAP was constructed before the relevant Effective FEMA Flood Insurance Rate Maps (FIRMs) were issued. The Effective FIRMs do not appear to account for the grading associated with NEAP. It appears the Zone A Floodplain delineated on the FIRM relies upon historical topography along the Middle Fork of the Vermilion River.

Further, the Owner plans to perform closure by removal and there will be no surface impoundment in the floodplain.

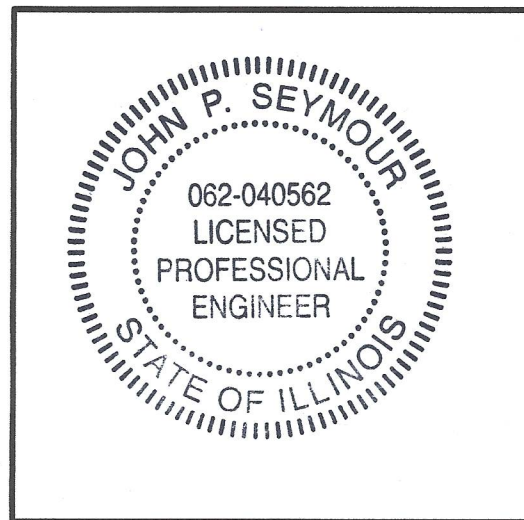
Section 845.330 (d): The owner or operator of the CCR surface impoundment must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of subsections (a) and (c).

I, John Seymour, being a Registered Professional Engineer in good standing in the State of Illinois, do hereby certify, to the best of my knowledge, information, and belief, that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced NEAP, that it is not located in an unstable area and that the NEAP meets the requirements of Section 845.340(a) and (c) as described in this certification document.

John Seymour
Printed Name

John Seymour 10/22/2021
Signature Date

062.040562 Illinois 30 November 2021
Registration Number State Expiration Date



Affix Seal

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