

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 Old
East Ash Pond Area and North Ash Pond Area 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 Old East Ash Pond Area (OEAP) and North Ash Pond Area (NAP) are inactive surface impoundments storing coal combustion residuals (CCR). The requirements for the OEAP and NAP 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)

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Pursuant to Section 845.340 (b)(1), no conditions associated with the potential for significant differential settlement due to liquefaction were identified. Report prepared by Geosyntec, titled “CCR Initial Safety Factor Assessment, Vermilion Power Plant, Old East Ash Pond and North Ash Pond”, dated October 2021, concluded that soils beneath the OEAP & NAP perimeter dikes 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 OEAP and NAP are in an area of low landslide incidence and the closest documented landslide is more than 11 miles from the OEAP and NAP. Accordingly, it is our opinion that the OEAP and NAP are not located in an area that has high susceptibility to landslides.

Pursuant to Section 845.340 (b)(3), there are no human-made features or events identified that would jeopardize the structural integrity of the OEAP and NAP.

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 OEAP & NAP were constructed prior to when the FEMA floodplain requirements were promulgated. Both OEAP & NAP were constructed before the relevant Effective FEMA Flood Insurance Rate Maps (FIRMs) were issued. The effective FEMA floodplains along the Middle of the Fork of Vermilion River were created using approximate methods (Zone A Floodplain) and delineated with topographic data that predated OEAP & NAP; consequently, the map did not reflect accurate site conditions applicable when regulatory requirements became applicable.

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

