CLOSURE PLAN FOR EXISTING CCR SURFACE IMPOUNDMENT — REV 0 – 11/18/2015

40 CFR 257.102 (b)

SITE INFORMATION

Site Name / Address	Hennepin Power Station/ 13498 E. 800th Street, Hennepin, IL 61327		
Owner Name / Address	Dynegy Midwest Generation, LLC/ 1500 Eastport Plaza Drive, Collinsville, IL 62234		
CCR Unit	Old West Ash Pond	Final Cover Type	Clayey Soil Cover
Reason for Initiating Closure	Known final receipt of waste	Closure Method	Close In-Place

CLOSURE PLAN DESCRIPTION

(b)(1)(i) – Narrative description of how the CCR unit will be closed in accordance with this section.	The Old West Ash Pond (Pond No. 1 and Pond No. 3) will be dewatered to facilitate closure and closed in-place. The final cover will be sloped to promote drainage and the stormwater runoff will be discharged through the existing NPDES permitted outfall. Closure operations will involve: (i) regrade fill to create acceptable grades for closure and (ii) install final cover. In accordance with 257.102(b)(3), this initial written closure plan will be amended to provide additional details after the final engineering design for the grading and cover system is completed. This initial closure plan reflects the best information available to date.
(b)(1)(iii) – If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system and methods and procedures used to install the final cover.	The final cover system will be installed in direct contact with graded CCR to achieve final subgrade elevations and will include (from bottom up): 1) 18" of compacted earthen material with a permeability of less than or equal to the permeability of the natural subsoils present at the site or no greater than $1x10^{-5}$ cm/sec, whichever is less (infiltration layer); 2) 6" of soil capable of sustaining native plant growth (erosion layer); and 3) planted with native grasses. The final cover slope will have a minimum slope of 2% and will be graded to convey stormwater runoff for final discharge through the existing NPDES outfall. CCR material will be regraded as fill to bring the grade up to the design slopes. Earthen material will be placed, graded, and compacted to meet the thickness as discussed above. Earthen material will be placed to create a 6" soil erosion layer that will sustain native plant growth. The final cover surface will be seeded and vegetated.
(b)(1)(iii) – How the final cover system will achieve the performance standards in 257.102(d).	
(d)(1)(i) Control, 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 theground or surface waters or to the atmosphere.	The permeability of the final cover will be equal to or less than the permeability of the natural subsoils present or a permeability no greater than $1x10^{-5}$ cm/sec, whichever is less, and will be graded with a minimum 2% slope.
(d)(1)(ii) – Preclude the probability of future impoundment of water, sediment, or slurry.	The final cover will be installed with a minimum 2% slope. Benches will have a maximum width of 300', as needed across the unit.
(d)(1)(iii) – Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period.	The final cover will have a minimum 2% slope. Final slope of the berms and cover will meet the stability requirements to prevent sloughing or movement of the final cover system using geotechnical analysis.
(d)(1)(iv) – Minimize the need for further maintenance of the CCR unit.	The final cover will be vegetated to minimize erosion and maintenance.
(d)(1)(v) – Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.	Closure is estimated to be completed by November 19, 2020.
(d)(2)(i) – Free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residue.	The unit will be dewatered sufficiently to remove the free liquids to provide a stable base for the construction of the final cover system.
(d)(2)(ii) – Remaining wastes must be stabilized sufficiently to support the final cover system.	Dewatering and regrading of existing in-place CCR will sufficiently stabilize the waste such that the final cover will be supported.
(d)(3) – A final cover system must be installed to minimize infiltration and erosion, and at minimum, meets the requirements of (d)(3)(i).	The final cover will consist of a minimum 18" infiltration layer with a permeability equal to or less than the permeability of the natural subsoils or no greater than $1x10^{-5}$ cm/sec, whichever is less. Erosion will be minimized with an erosion layer no less than 6" of earthen material capable of sustaining native plant growth. The final cover surface will be seeded and vegetated.
(d)(3)(i) – The design of the final cover system must be included in the written closure plan.	When the final design of the final cover system is completed, the written closure plan will be amended to include the detailed final design.
(d)(3)(i)(A) – The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than $1x10^{-5}$ cm/sec, whichever is less.	The permeability of the final cover will be equal to or less than the permeability of the natural subsoils or no greater than $1x10^{-5}$ cm/sec, whichever is less. This will be verified during construction per the construction quality assurance plan to be developed in conjunction with the detailed amended closure plan.
(d)(3)(i)(B) – The infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer than contains a minimum of 18 inches of earthen material.	The final cover will include a minimum 18" of compacted earthen material with a permeability equal to or less than the permeability of the natural subsoils or no greater than $1x10^{-5}$ cm/sec, whichever is less (infiltration layer).
(d)(3)(i)(C) – The erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.	The final cover will include a minimum 6" of a soil erosion layer that is capable of sustaining native plant growth (erosion layer). The final cover will be seeded and vegetated.
(d)(3)(i)(D) – The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.	The final cover will be installed with a minimum 2% slope and will incorporate calculated settlement as well as differential settling and subsidence.

INVENTORY AND AREA ESTIMATES

(b)(1)(iv) – Estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit	500,000 cubic yards
(b)(1)(v) – Estimate of the largest area of the CCR unit ever requiring a final cover	30 acres

CLOSURE SCHEDULE

(b)(1)(vi) – Schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including major milestones …and the estimated timeframes to complete each step or phase of CCR unit closure.

The milestone and the associated timeframes are initial estimates. Some of the activities associated with the milestones will overlap. Amendments to the milestones and timeframes will be made as more information becomes available.

Written Closure Plan and Notification of Intent to Close Placed in Operating Record	By November 18, 2015
Agency coordination and permit acquisition • Coordinating with state agencies for compliance • Acquiring state permits	 2020 (estimated) 2017 (estimated)
Mobilization	2018 (estimated)
Reroute plant process water pipes and dewater and stabilize CCR • Complete dewatering • Complete stabilization of CCR	 2018 (estimated) 2018 (estimated)
Grading • Grading of CCR material in pond to facilitate surface water drainage	2019 (estimated)
Installation of final cover	2020 (estimated)
Estimate of Year in which all closure activities will be completed	2020

Certification by qualified professional engineer appended to this plan.

Certification Statement 40 CFR § 257.102 (b)(4) – Initial Written Closure Plan for a CCR Surface Impoundment or Landfill

CCR Unit: Dynegy Midwest Generation, LLC; Hennepin Power Station; Hennepin Old West Ash Pond

I, Jeremy M. Thomas, 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 CCR Unit, that the information contained in the initial written closure plan, November 18, 2015, meets the requirements of 40 CFR § 257.102.

Jeremy M. Thomas

Printed Name

11-18-2015

Date

Certification Statement 40 CFR § 257.102 (d)(3)(iii) – Design of the Final Cover System for a CCR Surface Impoundment or Landfill

CCR Unit: Dynegy Midwest Generation, LLC; Hennepin Power Station; Hennepin Old West Ash Pond

I, Jeremy M. Thomas, 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 CCR Unit, that the design of the final cover system as included in the initial written closure plan, dated November 18, 2015, currently prepared meets the requirements of 40 CFR § 257.102.

Jeremy M. Thomas

Printed Name

11-18-2015

Date