CCR RULE COMPLIANCE

BOTTOM ASH PONDS
HAZARD POTENTIAL CLASSIFICATION
INITIAL ASSESSMENT REPORT

Prepared for:

NRG Power Midwest LP
Cheswick Generating Station
Springdale, Pennsylvania

Prepared by:

CB&I Environmental & Infrastructure, Inc.
Pittsburgh, Pennsylvania 15235

October 2016

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1.0 Introduction

On December 19, 2014, the Administrator of the United States Environmental Protection Agency signed the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities final rule (the Rule). The Rule was published in the Federal Register on April 17, 2015, became effective on October 19, 2015, and is contained within amended portions of Title 40, Part 257 of the Code of Federal Regulations (CFR). The Rule establishes a comprehensive set of requirements for the disposal/management of CCR in landfills and surface impoundments at coal-fired power plants under Subtitle D of the Resource Conservation and Recovery Act. These requirements include compliance with location restrictions, design criteria, operating criteria, groundwater monitoring and corrective action criteria, and closure and post-closure care aspects.

Included with the design criteria under 40 CFR §257.73(a)(2)(i-ii) are requirements to conduct initial and periodic hazard potential classification assessments for all existing non-incised CCR surface impoundments. Pursuant to the Rule, this hazard potential classification is an assessment of "the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances." These assessments are to be certified by a professional engineer, must assign a low, significant, or high hazard potential rating to each CCR unit based on criteria provided in §257.53, and must provide the basis for the selected rating. The initial assessment must be completed no later than October 17, 2016, with subsequent periodic assessments required every 5 years.

The Cheswick Generating Station (Station) is a coal-fired power plant operated by NRG Power Midwest LP (a subsidiary of NRG Energy, Inc. [NRG]) and located in Springdale, Pennsylvania. The Station has two surface impoundments that are subject to this Rule, specifically identified as the Bottom Ash Recycle Pond and the Bottom Ash Emergency Pond. The ponds are utilized as part of bottom ash management operations, and receive ash transport water via gravity flow from nearby hydrobins. Accumulated bottom ash is removed from the ponds during periodic cleanout activities and is transported to the Station's CCR landfill (the Cheswick Ash Disposal Site) for disposal. The Bottom Ash Recycle Pond serves as the primary impoundment. The Bottom Ash Emergency Pond receives ash transport water on a temporary basis during cleanout of the Bottom Ash Recycle Pond (which occurs at least once a year and as needed), or as overflow from the Bottom Ash Recycle Pond. The Station and the two bottom ash ponds are shown on Figure 1.

NRG engaged the services of CB&I Environmental & Infrastructure, Inc. (CB&I) to conduct a review of both bottom ash ponds with respect to their size, configuration, and downstream features to develop respective hazard potential classifications for each of these CCR

impoundments. This review included the review of available background and design information and a field visit conducted on May 31, 2016.

This Report has been prepared to identify the initial hazard potential classification for the subject CCR impoundments, and to provide documentation required by the Rule, including the basis for the classification and certification of the findings by a professional engineer. Beyond this introductory section, Section 2.0 outlines the regulatory criteria for selection of a hazard potential classification; Section 3.0 describes the activities performed to support the hazard potential classification; and Section 4.0 provides the formal hazard rating assigned to each of the impoundments. Section 5.0 contains the professional engineer certification, and Section 6.0 lists the references that were consulted during this assessment.

As required, this Initial Assessment Report will be appropriately placed in the facility's operating record pursuant to §257.105(f)(5), noticed to the State Director per §257.106(f)(4), and posted to the publicly accessible internet site pursuant to §257.107(f)(4).

2.0 Hazard Potential Classification Criteria

The Rule presents hazard classification criteria as a means to categorize "the possible adverse incremental consequences that result from the release of water or stored contents due to failure or mis-operation of the diked CCR surface impoundment or its appurtenances." (Federal Register, 2015). From §257.53, there are three potential Hazard Classifications for CCR impoundments: Low, Significant, and High. The criteria for each category are as follows:

- *Low Hazard Potential* – Failure or mis-operation of the diked surface impoundment results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property.
- *Significant Hazard Potential* – A failure or mis-operation of the diked surface impoundment results in no probable loss of human life, but can cause disruption of lifeline facilities, or impact other concerns.
- *High Hazard Potential* - Failure or mis-operation of the diked surface impoundment will probably cause loss of human life.

3.0 Hazard Potential Classification Activities

The hazard potential classification process included three main steps: review of background and design information for the impoundments; conduct of a field visit to view the impoundments and surrounding area; and selection of a hazard potential rating for each impoundment using regulatory criteria presented in the Rule.

3.1 Review of Background and Design Information

Prior to the field visit, CB&I collected and reviewed available background and design information regarding the impoundments and surrounding area, including mapping, aerial images, and reports and other documents provided by NRG. Mapping and aerial images were utilized to prepare Figures 1 through 3 included with this report. Pertinent information identified during development of the figures included ground surface elevations and topography, property boundary lines, structures, surface water features, and infrastructure in the vicinity of the impoundments.

The impoundments are situated in a valley along Tawney Run (a tributary of the Allegheny River), and are incised on the west and diked on the east. They are located on a parcel in the northern reaches of the Station property, and are separated from the majority of the Station by Pittsburgh Street, a state-owned road that is maintained by the Pennsylvania Department of Transportation (PennDOT). The southernmost limits of the Bottom Ash Recycle Pond and Bottom Ash Emergency Pond footprints are approximately 1000 and 800 feet away from Pittsburgh Street, respectively.

Topographic information for the subject area was obtained from LIDAR mapping (PA Department of Conservation and Natural Resources, 2006). The ground surface in the vicinity of the impoundments slopes toward Tawney Run (located approximately 50 feet east of the impoundments) and southward toward the Allegheny River (located approximately 0.4 to 0.5 miles from the impoundments), and is situated on a hillside bench between contour elevations 770 and 780 feet mean sea level (ft msl). Runoff from properties uphill and to the west of the impoundments is routed around the impoundments and toward Tawney Run via a diversion channel, swales, and grading. There is a large grassy open area downgradient and to the south of the impoundments that has an average elevation of approximately 755 ft msl. Tawney Run passes under Pittsburgh Street at an approximate streambed elevation of 748 ft msl. Pittsburgh Street also has a low point at this crossing, with an approximate roadway surface elevation of 753 ft msl.

Google Earth imagery (Google Earth, 2016) was consulted to overlay nearby structures onto the site topographic mapping and to check select elevations. Google Earth indicated a typical

elevation of 779 ft msl around the crests of both impoundments, which is in agreement with the crest elevations identified in the design plans (Duquesne Light Company Engineering and Construction Division, Revised 1977). This elevation is higher than those indicated by the 2006 LIDAR mapping, and appears reflective of NRG's regrading and placement of fill around the basins to eliminate low areas in accordance with a 2014 Action Plan. Nearby properties and structures are generally topographically higher than the subject NRG property. The structures having the lowest elevations in the vicinity of the subject property and impoundments are located at the intersection of Pittsburgh Street and North and South Duquesne Avenues, and are constructed at ground surface elevations at and above 755 ft msl. Other structures in the vicinity of the NRG property and ponds are generally located at ground surface elevations of 760 ft msl and higher.

As part of this assessment, design and operational background information for the ponds was reviewed. It is important to note that the classification required by §257.73 is based on the consequences of the impoundment failing, and not on the likelihood of a failure. Subsequently, a limited amount of design and operational information was pertinent to this evaluation. Specifically, the contents and capacities of the ponds were considered as information relevant to estimating an inundation area and further determining the associated impacts that would occur under a breach scenario.

The Bottom Ash Recycle Pond has a normal operating capacity of 1.045 million gallons (3.2 ac-ft) while the Bottom Ash Emergency Pond has a capacity of 1.618 million gallons (5.0 ac-ft) (Peck, 1972). These capacities were considered relative to the downstream areas to help identify the likely inundation area. In addition, the capacities were compared to a threshold value of 20 ac-ft, at which impoundments of five feet in height or more require the compilation and submittal of additional construction and stability-related information. Due to the capacity of both ponds being less than 20 ac-ft, no evaluations beyond hazard potential classifications are required by §257.73.

3.2 Field Visit

On May 31, 2016, Laurel Lopez (CB&I senior engineer) met with Jill Buckley (NRG Environmental Specialist) to perform a site walk and visual reconnaissance of the ponds and surrounding area. The visit began with a walk-down of Tawney Run and the culvert crossing of Pittsburgh Street, which was noted to be a wide-arch culvert. There was some sediment visible in the bottom of the culvert, but NRG indicated that PennDOT provides regular cleanout and maintenance of the structure. The visit then progressed northward toward the ponds through a large, open and gently sloping grassy area between the ponds and Pittsburgh Street. CB&I walked the perimeter of the ponds and confirmed that inlet/outlet piping and structures appeared to be in agreement with the previously reviewed reports and documents. The Bottom Ash

Recycle Pond was in use and appeared to be at normal operating water level (with water levels near the top of weir elevation). The Bottom Ash Emergency Pond was in standby mode.

CB&I visually assessed upstream conditions for run-on potential and likely breach flow path conditions, respectively. A small diversion channel was observed running along the bottom of the hillside west of the Bottom Ash Recycle Pond, to intercept flow and convey it around the northern side of the pond, into a culvert, and ultimately to Tawney Run. Swales and grading around the Bottom Ash Emergency Pond appeared to direct potential run-on around both the northern and southern sides of the pond. In addition, a gravel surface around the ponds was noted to serve the dual purpose of providing an access road and crest, and was sloped away from the ponds, further limiting the potential for run-on.

CB&I visually assessed the downstream conditions with special attention to structures, infrastructure, and above-ground utilities in relation to the likely path of pond contents in the event of a breach. A powerline was noted to be present along the slope to the west of the ponds, extending southward along Station property. The supports for this power line are generally at the edge or outside of the anticipated inundation area, and no impact to this feature is expected to occur as the result of a breach. The downstream properties and Pittsburgh Street as shown on the maps and aerial imagery were visually verified, and in general, appeared to be at elevations higher than the anticipated inundation area.

3.3 Hazard Potential Classification Determination

The information gathered during review of background and design information and during the site visit was utilized to complete a Hazard Potential Classification Form (Form) for each impoundment, contained in Attachment A of this report. The Form was devised by CB&I to provide a comprehensive, methodical, and quantitative means to select a hazard rating. The following types of impacts were considered: loss of human life, economic losses, environmental losses, damage to lifeline facilities, and other concerns (such as impacts to critical facilities, such as medical facilities, transportation facilities, etc.). A worst-case failure scenario was considered to be a catastrophic dike failure and sudden release of the impoundment contents (i.e., a breach scenario). The failure of one pond would not tend to cause the failure of the other; as such, each pond was considered independently. Due to similarities between the ponds, the findings and conclusions are consistent between the ponds.

During a pond breach scenario, it would be expected that solid material from the structure's berm and also settled solids contained in the pond would generally deposit in the near vicinity of the pond toe. Some of the finer sediment from the pond may be transported further, but it is anticipated that the majority of solid material would drop out in the approximately 50-foot distance between the pond and Tawney Run. Released water would enter the Tawney Run stream channel and then flow southward toward Pittsburgh Street. If the flow were to exceed the

capacity of the stream channel and/or culvert under Pittsburgh Street, it would spread out across the valley. In general, the flow would be expected to spread into the lower lying areas that correspond to the FEMA flood hazard zone (shown on Figure 3). In the vicinity of Pittsburgh Street, this flood zone corresponds reasonably well to the area enveloped by the 755 ft msl contour. Due to the large area contained by this contour, it is reasonable to expect that extension of the inundation area above an elevation of 755 ft msl would be unlikely, and that the flow would likely have dissipated substantially if it were to cross Pittsburgh Street. Any such crossing is expected to be brief and unlikely to cause damage or lasting impacts. The flow would continue southward on the NRG property south of Pittsburgh Street, toward the Allegheny River. Little appreciable flow would be expected to exit the NRG property via an overland pathway, and a modest increase in flow from Tawney Run to the River would be expected. No appreciable or lasting impacts to the River or adjacent properties are anticipated.

4.0 Conclusions

Based on the review of background and design information, observations made during the site visit, and hazard potential evaluation activities performed as part of this assessment, the following hazard ratings were selected for the Cheswick Station CCR impoundments:

Impoundment Name	Hazard Potential Rating
Bottom Ash Recycle Pond	Low
Bottom Ash Emergency Pond	Low

These ratings are based on the determination that a failure or mis-operation of these impoundments would be unlikely to cause a loss of human life and would cause minor economic or environmental losses principally limited to the surface impoundment owner's property. In addition, a failure or mis-operation would be unlikely to impact lifeline or critical facilities or cause other significant negative effects.

5.0 Professional Engineer Certification

I attest to being familiar with the hazard potential standards of the Rule, and the classification categories as defined in 40 CFR §257.53. I have personally visited and examined the Cheswick Generating Station Bottom Ash Ponds, and hereby certify that the information contained in this report and the selected hazard potential classifications for the subject units are true and accurate to the best of my belief. This initial hazard potential classification has been conducted in accordance with the requirements of 40 CFR §257.73.

Name of Professional Engineer: Laurel C. Lopez

Company: CB&I Environmental & Infrastructure, Inc.

Signature: Laurel C Lopez

Date: 10-13-16

PE Registration State: Pennsylvania

PE Registration Number: PE-055673-E

Professional Engineer Seal:

6.0 References

"Critical Facilities." *The National Weather Service.* Web. 6 May 2016.

Duquesne Light Company Engineering and Construction Division. "Cheswick Power Station Bottom Ash Water Recycle System." Design Drawing No. 9853-B1. Approved July 7, 1971. Last Revised June 30, 1977.

Duquesne Light Company Engineering and Construction Division. "Cheswick Power Station Bottom Ash Water Recycle System." Design Drawing Nos. 9853-B9, B10, B11, & B13. Approved July 14, 1971. Last Revised May 22, 1972.

Duquesne Light Company Engineering and Construction Division. "Cheswick Power Station Bottom Ash Water Recycle System." Design Drawing No. 9853-B12. Approved July 14, 1971. Last Revised June 7, 1972.

Duquesne Light Company Engineering and Construction Division. "Establish Recycle Basin Freeboard Plan and Sections." Design Drawing No. 15400-B1. Last Revised June 2, 1989.

Federal Emergency Management Agency (FEMA). "National Flood Hazard Layer." Allegheny County, Pennsylvania. January 27, 2015.

Federal Register, Vol. 80, No. 74. Sections 257.53 (Definitions) and 257.73 (Structural Integrity Criteria for Existing CCR Surface Impoundments). April 17, 2015.

Geosyntec. "Assessment Report, Cheswick Power Station – Bottom Ash Ponds." February 7, 2013.

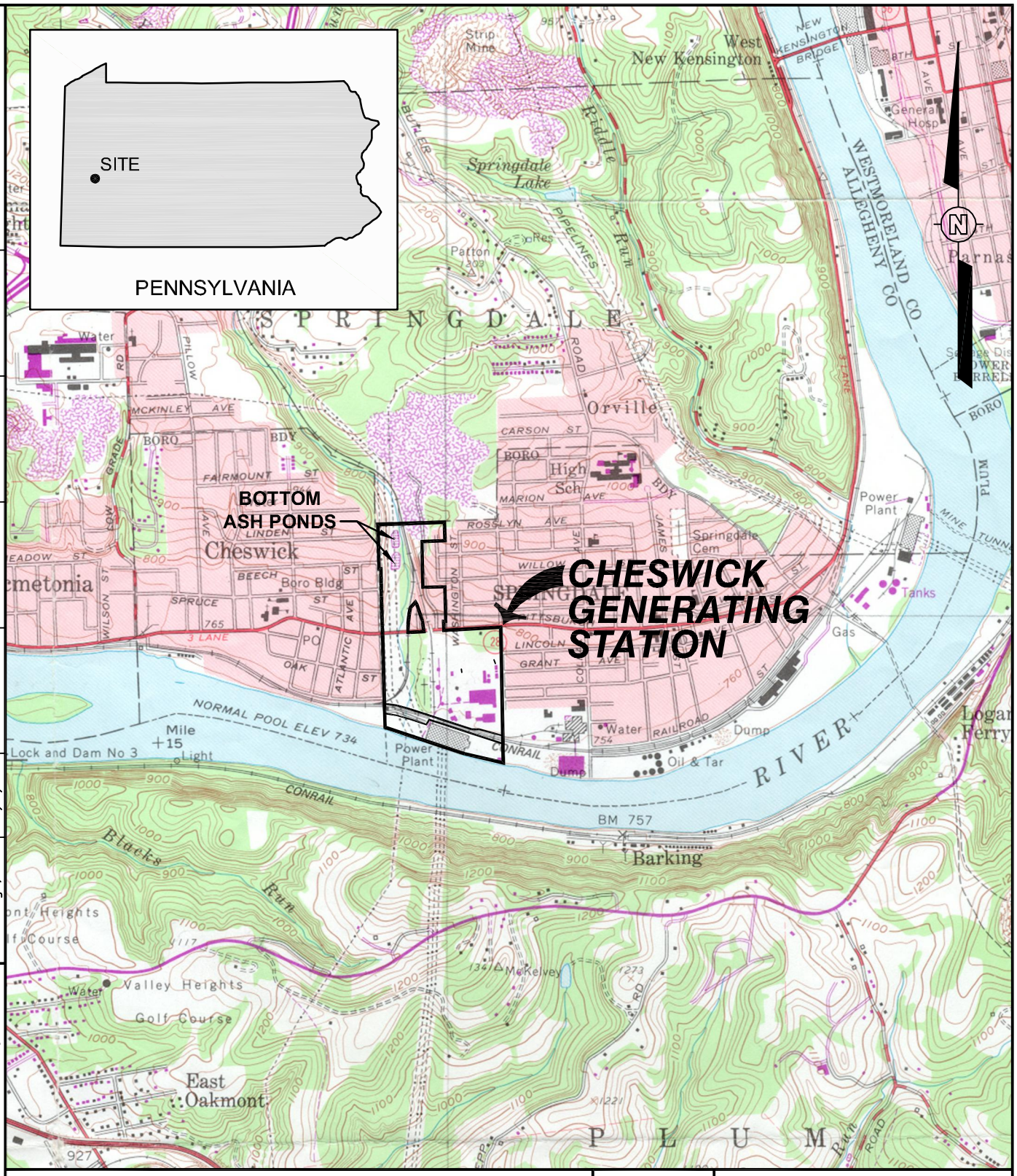
Google Earth. Imagery for Cheswick, Pennsylvania. Dated April 17, 2016.

O'Brien & Gere. "Dam Safety Assessment of CCW Impoundments, NRG Cheswick Power Station." Prepared for the United States Environmental Protection Agency. January 24, 2014.

Peck, David F. "Industrial Waste Permit Application, Duquesne Light Company, Cheswick Power Station, Bottom Ash Wastewater Treatment Facilities." Submitted to the State of Pennsylvania Department of Environmental Resources. July 1972.

Pennsylvania Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey. LIDAR Mapping. PA Map Program. April 2006.

Figures



DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	DESIGNED BY	DATE	OFFICE
1009134004-A1	LCL	DJS	ELS	LCL	10/4/16	Pittsburgh, PA

SCALE

0 2000 4000 FEET

REFERENCE:

U.S.G.S. 7.5–MINUTE TOPOGRAPHIC MAP NEW KENSINGTON WEST PENNSYLVANIA QUADRANGLE, DATED 1960, PHOTOREVISED: 1979 SCALE: 1"=2000'.

CB&I
500 Penn Center Boulevard, Suite 1000
Pittsburgh, Pennsylvania

nrg.

FIGURE 1

SITE LOCATION MAP

CHESWICK GENERATING STATION
SPRINGDALE, ALLEGHENY COUNTY, PENNSYLVANIA

File: O:\PROJECT\1009134004_Cheswick\1009134004-A1.dwg
Plot Date/Time: Oct 10, 2016 - 3:32pm
Plotted By: Evan.Schlegel
Xref:
Image: 122760im1.jpg
NRG logo.PNG

OFFICE *Pittsburgh, PA*

DRAWING NUMBER 1009134004-B1

LEGEND:

- APPROXIMATE STATION PROPERTY BOUNDARY
- EXISTING DRAINAGE CHANNEL OR SWALE

SCALE
0 100 200 300feet

REFERENCE:

GOOGLE EARTH AERIAL PHOTOGRAPH
DATED 4/17/2016.

REV	DESCRIPTION / ISSUE	DATE	APPROVED

CB&I
500 Penn Center Boulevard, Suite 1000
Pittsburgh, Pennsylvania 15235

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	SCALE:	DRAWING NO.	SHEET NO.
LCL	ELS	DJS	LCL	10/4/16	AS SHOWN	1009134004-B1	--

nrg.

FIGURE 2
PHOTOGRAPHIC MAP
CHESWICK GENERATING STATION
SPRINGDALE, ALLEGHENY COUNTY, PENNSYLVANIA

VERIFY SCALE 0 1"

Xref : Image

File: O:\PROJECT\1009134004_Cheswick\1009134004-B1.dwg
Plot Date/Time: Oct 04, 2016 - 2:08pm
Plotted By: Evan.Schlegel

DRAWING NUMBER 1009134004-B2

OFFICE *Pittsburgh, PA*

VERIFY SCALE 0 1"

Xref : Image

CULVERT

LINDEN STREET

BOTTOM ASH RECYCLE POND

CONCRETE STILLING BASIN

PUMP HOUSE

BOTTOM ASH EMERGENCY POND

HYDROBINS

BEECH STREET

JANNEY RUN

SPRUCE STREET

MURRAYHILL AVE.

N. DUQUESNE AVE.

CULVERT

DUQUESNE COURT

PITTSBURGH STREET

S. DUQUESNE AVE.

SHADY AVE.

ROSSLYN AVE.

BECHMAN STREET

ELWYN AVE.

SHAW AVE.

WASHINGTON STREET

MAXWELL AVE.

N

LEGEND:

- APPROXIMATE STATION PROPERTY BOUNDARY
- 760 — 2-FOOT TOPOGRAPHIC CONTOUR (REFERENCE 1)
- 755 — APPROXIMATE TOPOGRAPHIC CONTOUR (INTERPOLATED FROM REFERENCE 1)
- EXISTING STREAM
- FLOW DIRECTION OF POND CONTENTS UNDER BREACH SCENARIO
- EXISTING STRUCTURE (SEE NOTE 1)
- FEMA SPECIAL FLOOD HAZARD AREA (SFHA) LIMITS (REFERENCE 3)
- DRAINAGE CHANNEL OR SWALE (APPROXIMATE LOCATION)
- 779 — APPROXIMATE RESTORED CREST (REFERENCE 4)

NOTE:

1. ONLY STRUCTURES IN NEARBY AREAS THAT COULD POTENTIALLY BE IMPACTED BY A POND BREACH ARE DEPICTED. OUTLINES OF THESE STRUCTURES ARE APPROXIMATE AND WERE DERIVED FROM REFERENCE 2.

SCALE
0 100 200 300feet

REFERENCES:

1. GROUND SURFACE CONTOURS WERE OBTAINED FROM PAMAP PROGRAM, PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, LIDAR MAPPING, COLLECTED 4/2006.

2. EXISTING STRUCTURES WERE OBTAINED FROM GOOGLE EARTH PHOTOGRAPHY DATED 4/17/2016.

3. SFHA LIMITS WERE OBTAINED FROM FEMA, NATIONAL FLOOD HAZARD LAYER, ALLEGHENY COUNTY, PA, 01/27/2015.

4. APPROXIMATE RESTORED CREST ELEVATIONS FOR THE PONDS WERE OBTAINED FROM "CHESWICK POWER STATION BOTTOM ASH WATER RECYCLE SYSTEM, DESIGN DRAWING NO. 9853–B1", BY DUQUESNE LIGHT COMPANY, LAST REVISED 6/30/1977.

REV	DESCRIPTION / ISSUE	DATE	APPROVED

CB&I
500 Penn Center Boulevard, Suite 1000
Pittsburgh, Pennsylvania 15235

DESIGNED BY:	*LCL*
DRAWN BY:	*ELS*
CHECKED BY:	*DJS*
APPROVED BY:	*LCL*
DATE:	10/4/16
SCALE:	AS SHOWN
DRAWING NO.	1009134004–B2
SHEET NO.	--

nrg.

FIGURE 3
TOPOGRAPHIC AND FLOW DIRECTION MAP
CHESWICK GENERATING STATION
SPRINGDALE, ALLEGHENY COUNTY, PENNSYLVANIA

File: G:\PROJECT\1009134004_Cheswick\1009134004-B2.dwg
Plot Date/Time: Oct 04, 2016 - 1:51pm
Plotted By: Evan.Schlegel

Attachment A

Hazard Potential Classification Forms

CCR SURFACE IMPOUNDMENT
HAZARD POTENTIAL CLASSIFICATION FORM

Facility Name: Cheswick Generating Station

Unit Name: Bottom Ash Recycle Pond

Type of Inspection (Circle One): [Initial] Periodic **Date of Visit:** 5/31/2016

Impoundment Configuration (Circle or Specify): Cross-Valley Side-Hill Diked Incised Other: Combination Diked/ Incised

Notes:
1. If the impoundment is entirely incised, hazard potential classification is not necessary.
2. For the purposes of selecting a hazard potential category, this form assigns numeric values to the categories listed in 40 CFR §257.53, as follows:
   1 = Low 2 = Significant 3 = High

I. Risk to Human Life

Pursuant to 40 CFR 257.53, the probable loss of human life results in a High hazard potential rating.

Consideration	Yes	No	N/A	Scoring	Selected Score	Comments
Loss of Human Life *Would a failure or mis-operation of the unit probably cause loss of human life?*	☐	☑	☐	No = 1 Yes = 3	1	

II. Economic Losses

40 CFR 257.53 associates economic loss with a Significant hazard potential rating, except that low economic losses principally limited to the owner's property may be associated with a Low hazard potential rating.

Consideration	Yes	No	N/A	Scoring	Selected Score	Comments
Affected Parties *Would economic losses be principally limited to the surface impoundment owner's property?*	☑	☐	☐	Yes = 1 No = 2	1	Anticipated flow path predominantly follows NRG property.
Magnitude *Are the anticipated economic losses due to a failure or mis-operation of the impoundment relatively low compared to the resources available to the owner/operator to correct foreseeable impacts?*	☑	☐	☐	Yes = 1 No = 2	1	

III. Environmental Losses

40 CFR 257.53 associates environmental damage with a Significant hazard potential rating, except that low environmental losses principally limited to the owner's property may be associated with Low hazard potential rating.

Feature	Yes	No	N/A	Scoring	Selected Score	Comments
Affected Areas *Would environmental losses be principally limited to the surface impoundment owner's property?*	☑	☐	☐	Yes = 1 No = 2	1	Anticipated flow path predominantly follows NRG property.
Containment *In the event of a failure or mis-operation, is it likely that the CCR materials would be contained on NRG property, either by natural features or through reasonably applied remedial measures, so as to prevent offsite migration of these materials?*	☑	☐	☐	Yes = 1 No = 2	1	Existing topography and site configuration encourage solids drop out and the spreading out and dissipation of flow before exit of NRG property.
Restoration *Is it expected that the area(s) impacted by a failure or mis-operation of the impoundment could be readily restored to pre-incident conditions?*	☑	☐	☐	Yes = 1 No = 2	1	
Sensitive Species *Are there any protected or endangered species in the area that would likely be impacted by a failure or mis-operation of the impoundment?*	☐	☑	☐	No = 1 Yes = 2	1	
Wetlands *Are there any jurisdictional or other identified wetlands in the area that would likely be impacted by a failure or mis-operation of the impoundment?*	☐	☑	☐	No = 1 Yes = 2	1	
Waterways *Are there any navigable streams or rivers that would likely be impacted by a failure or mis-operation of the impoundment?*	☐	☑	☐	No = 1 Yes = 2	1	Appreciable impacts to the Allegheny River are not anticipated for reasons previously noted above.

CCR SURFACE IMPOUNDMENT
HAZARD POTENTIAL CLASSIFICATION FORM

Facility Name: Cheswick Generating Station

Unit Name: Bottom Ash Recycle Pond

Type of Inspection (Circle One): Initial Periodic **Date of Visit:** 5/31/2016

IV. Lifeline Facilities

40 CFR 257.53 associates disruption of lifeline facilities with a Significant hazard potential rating. The National Weather Service defines lifeline facilities as distributive systems and related facilities necessary to provide electric power, oil and natural gas, water and wastewater, and communications.

Condition	Yes	No	N/A	Scoring	Selected Score	Comments
Lifeline Facilities *Would a failure or mis-operation likely cause disruption to any distributive systems or facilities that provide electric power, oil and natural gas, water and wastewater, or communication services?*	☐	☑	☐	No = 1 Yes = 2	1	Nearby powerline supports and Station infrastructure are generally located outside or along the perimeter of the anticipated inundation area.

V. Other Concerns

40 CFR 257.53 notes the potential for other concerns not specifically identified in the regulation to justify a Significant hazard rating. CB&I recognizes probable impacts to "Critical Facilities" as another concern that may trigger a Significant hazard rating. Critical Facilities as identified by the National Weather Service are listed below. Lifeline Facilities are also considered to be Critical Facilities, but are not listed below due to being addressed in Item IV. The inspector shall also consider any other site-specific concerns not previously addressed that may impact the hazard rating, and shall write in any such concerns below.

Condition	Yes	No	N/A	Scoring	Selected Score	Comments
Critical Facilities *Would failure or mis-operation of the impoundment likely cause damage or sustained closure of any of the following critical facilities? If yes, please specify.*				No (to all) = 1 Yes (to any) = 2	1	A wide arch culvert conveys flow for Tawney Run under Pittsburgh Street. Under a breach scenario, the pond contents would likely concentrate along this same flow path. If the culvert capacity were to be exceeded, some water could cross over Pittsburgh Street, but this flow would likely be very brief, shallow, and unlikely to cause damage or sustained closure.
Emergency Response Facilities	☐	☑	☐			
Medical Facilities	☐	☑	☐			
Designated Emergency Shelters	☐	☑	☐			
Transportation	☐	☑	☐			
Telecommunications	☐	☑	☐			
Data centers	☐	☑	☐			
Financial	☐	☑	☐			
Major industrial/commercial	☐	☑	☐			
Other Concerns *Are there any other significant concerns relative to the potential impacts due to the failure or mis-operation of this impoundment? If yes, please specify.*	☐	☑	☐	No = 1 Yes = 2 (Depending on Severity)	1	

IV. Conclusions/Final Rating

The Final Rating is equal to the Maximum of all "Selected Scores" above.

Final Score = 1 (=Maximum "Selected Score" from above)

Hazard Potential Classification = LOW (1 = Low 2 = Significant 3 = High)

Laurel C. Lopez
Printed Name

Laurel C Lopez
Signature*

Senior Engineer, CB&I
Title / Company

** Signature certifies that the inspection was performed as indicated, and that the information contained herein is true and accurate to the best of the inspector's knowledge.*

CCR SURFACE IMPOUNDMENT
HAZARD POTENTIAL CLASSIFICATION FORM

Facility Name: Cheswick Generating Station

Unit Name: Bottom Ash Emergency Pond

Type of Inspection (Circle One): Initial Periodic **Date of Visit:** 5/31/2016

Impoundment Configuration (Circle or Specify): Cross-Valley Side-Hill Diked Incised Other: Combination Diked/ Incised

Notes:
1. If the impoundment is entirely incised, hazard potential classification is not necessary.
2. For the purposes of selecting a hazard potential category, this form assigns numeric values to the categories listed in 40 CFR §257.53, as follows:
   1 = Low 2 = Significant 3 = High

I. Risk to Human Life

Pursuant to 40 CFR 257.53, the probable loss of human life results in a High hazard potential rating.

Consideration	Yes	No	N/A	Scoring	Selected Score	Comments
Loss of Human Life *Would a failure or mis-operation of the unit probably cause loss of human life?*	☐	☑	☐	No = 1 Yes = 3	1	

II. Economic Losses

40 CFR 257.53 associates economic loss with a Significant hazard potential rating, except that low economic losses principally limited to the owner's property may be associated with a Low hazard potential rating.

Consideration	Yes	No	N/A	Scoring	Selected Score	Comments
Affected Parties *Would economic losses be principally limited to the surface impoundment owner's property?*	☑	☐	☐	Yes = 1 No = 2	1	Anticipated flow path predominantly follows NRG property.
Magnitude *Are the anticipated economic losses due to a failure or mis-operation of the impoundment relatively low compared to the resources available to the owner/operator to correct foreseeable impacts?*	☑	☐	☐	Yes = 1 No = 2	1	

III. Environmental Losses

40 CFR 257.53 associates environmental damage with a Significant hazard potential rating, except that low environmental losses principally limited to the owner's property may be associated with Low hazard potential rating.

Feature	Yes	No	N/A	Scoring	Selected Score	Comments
Affected Areas *Would environmental losses be principally limited to the surface impoundment owner's property?*	☑	☐	☐	Yes = 1 No = 2	1	Anticipated flow path predominantly follows NRG property.
Containment *In the event of a failure or mis-operation, is it likely that the CCR materials would be contained on NRG property, either by natural features or through reasonably applied remedial measures, so as to prevent offsite migration of these materials?*	☑	☐	☐	Yes = 1 No = 2	1	Existing topography and site configuration encourage solids drop out and the spreading out and dissipation of flow before exit of NRG property.
Restoration *Is it expected that the area(s) impacted by a failure or mis-operation of the impoundment could be readily restored to pre-incident conditions?*	☑	☐	☐	Yes = 1 No = 2	1	
Sensitive Species *Are there any protected or endangered species in the area that would likely be impacted by a failure or mis-operation of the impoundment?*	☐	☑	☐	No = 1 Yes = 2	1	
Wetlands *Are there any jurisdictional or other identified wetlands in the area that would likely be impacted by a failure or mis-operation of the impoundment?*	☐	☑	☐	No = 1 Yes = 2	1	
Waterways *Are there any navigable streams or rivers that would likely be impacted by a failure or mis-operation of the impoundment?*	☐	☑	☐	No = 1 Yes = 2	1	Appreciable impacts to the Allegheny River are not anticipated for reasons previously noted above.

CCR SURFACE IMPOUNDMENT
HAZARD POTENTIAL CLASSIFICATION FORM

Facility Name: Cheswick Generating Station

Unit Name: Bottom Ash Emergency Pond

Type of Inspection (Circle One): Initial Periodic **Date of Visit:** 5/31/2016

IV. Lifeline Facilities

40 CFR 257.53 associates disruption of lifeline facilities with a Significant hazard potential rating. The National Weather Service defines lifeline facilities as distributive systems and related facilities necessary to provide electric power, oil and natural gas, water and wastewater, and communications.

Condition	Yes	No	N/A	Scoring	Selected Score	Comments
Lifeline Facilities *Would a failure or mis-operation likely cause disruption to any distributive systems or facilities that provide electric power, oil and natural gas, water and wastewater, or communication services?*	☐	☑	☐	No = 1 Yes = 2	1	Nearby powerline supports and Station infrastructure are generally located outside or along the perimeter of the anticipated inundation area.

V. Other Concerns

40 CFR 257.53 notes the potential for other concerns not specifically identified in the regulation to justify a Significant hazard rating. CB&I recognizes probable impacts to "Critical Facilities" as another concern that may trigger a Significant hazard rating. Critical Facilities as identified by the National Weather Service are listed below. Lifeline Facilities are also considered to be Critical Facilities, but are not listed below due to being addressed in Item IV. The inspector shall also consider any other site-specific concerns not previously addressed that may impact the hazard rating, and shall write in any such concerns below.

Condition	Yes	No	N/A	Scoring	Selected Score	Comments
Critical Facilities *Would failure or mis-operation of the impoundment likely cause damage or sustained closure of any of the following critical facilities? If yes, please specify.*				No (to all) = 1 Yes (to any) = 2	1	A wide arch culvert conveys flow for Tawney Run under Pittsburgh Street. Under a breach scenario, the pond contents would likely concentrate along this same flow path. If the culvert capacity were to be exceeded, some water could cross over Pittsburgh Street, but this flow would likely be very brief, shallow, and unlikely to cause damage or sustained closure.
Emergency Response Facilities	☐	☑	☐			
Medical Facilities	☐	☑	☐			
Designated Emergency Shelters	☐	☑	☐			
Transportation	☐	☑	☐			
Telecommunications	☐	☑	☐			
Data centers	☐	☑	☐			
Financial	☐	☑	☐			
Major industrial/commercial	☐	☑	☐			
Other Concerns *Are there any other significant concerns relative to the potential impacts due to the failure or mis-operation of this impoundment? If yes, please specify.*	☐	☑	☐	No = 1 Yes = 2 (Depending on Severity)	1	

IV. Conclusions/Final Rating

The Final Rating is equal to the Maximum of all "Selected Scores" above.

Final Score = 1 (=Maximum "Selected Score" from above)

Hazard Potential Classification = LOW (1 = Low 2 = Significant 3 = High)

Laurel C. Lopez
Printed Name

Laurel C Lopez
Signature*

Senior Engineer, CB&I
Title / Company

** Signature certifies that the inspection was performed as indicated, and that the information contained herein is true and accurate to the best of the inspector's knowledge.*