solutions and action

Interstate Power and Light Company
Burlington Generating Station
CCR Surface Impoundment Inflow Design Flood Control Plan
154.018.029.001
Report issued: June 15, 2026 – Revision 2

Hard Hat Services
ph: 630-688-1314
hardhatinc.com
245 Kenilworth Ave
Glen Ellyn, IL 60137

Executive Summary

This Inflow Flood Control Plan (Report) for the Burlington Generating Station (BGS) has been prepared in accordance with the requirements of the United States Environmental Protection Agency rules for Hazardous and Solid Waste Management System – Disposal of CCR from Electric Utilities (40 CFR Parts 257 and 261, also known as CCR Rule).

This Report serves as the second update to assess the hydrologic and hydraulic capacity requirements for each CCR unit at BGS in Burlington, Iowa in accordance with §257.82 of the CCR Rule. Primarily, the Report documents how the inflow design flood control system has been designed and constructed to meet the CCR Rule section §257.82.

Table of Contents

Figures

Appendices

1. INTRODUCTION

The owner or operator of the Coal Combustion Residual (CCR) unit must conduct an initial and periodic inflow design flood control system plan to determine if each CCR unit adequately manages flow into and from each CCR unit during and following the peak discharge of the inflow design flood. The inflow design flood is selected based on the hazard potential classification (§257.73(a)(2)) for each CCR unit.

1.1 CCR Rule Requirements

The CCR Rule requires an initial and periodic inflow design flood control system plan certified by a qualified professional engineer (PE) for all existing, inactive, and legacy CCR surface impoundments (§257.82(c)(5)).

1.2 Hydrologic and Hydraulic Capacity Applicability

The Interstate Power and Light Company (IPL), Burlington Generating Station (BGS) in Burlington, Iowa (Figure 1) has four existing CCR surface impoundments that meet the requirements of §257.82 and is subject to the periodic inflow design flood requirements of §257.73(b)(1) or §257.73(b)(2) of the CCR Rule, which are identified as follows:

- BGS Ash Seal Pond
- BGS Main Ash Pond
- BGS Economizer Pond
- BGS Upper Ash Pond

2. FACILITY DESCRIPTION

BGS is located southeast of the City of Burlington, Iowa, on the western shore of the Mississippi River in Des Moines County, at 4282 Sullivan Slough Road, Burlington, Iowa (Figure 1). BGS is a fossil-fueled electric generating station consisting of one steam electric generating unit and four combustion turbine units. Sub-bituminous coal was the primary fuel for producing steam, with the ability to use natural gas for the combustion turbines. The burning of coal produces CCR. The CCR at BGS was categorized into three types: bottom ash, economizer ash, and precipitator fly ash. As of December 30, 2021, the BGS steam electric generating unit no longer used coal as a fuel source and was converted to natural gas.

General Facility Information:

Date of Initial Facility Operations:	1968
Historical NPDES Permit Number:	IA29-00-1-01
Facility Title V Operating Permit:	98-TV-023R1-M004
Latitude / Longitude:	40°44’29”N 91°07’04”W
Unit Nameplate Ratings:	Unit 1: 212 MW
Impoundment IDNR State ID	29-SDP-13-23C

2.1 BGS Ash Seal Pond

The former BGS Ash Seal Pond was located south of the generating plant and east of the former BGS Main Ash Pond. The CCR at BGS, in 1968, was originally managed by discharging into the former BGS Ash Seal Pond for settling. In the 1970s, the former BGS Ash Seal Pond was modified to only receive stormwater runoff from the surrounding area associated with the fly ash storage silo and to receive facility process water, such as ash seal water, but only if there was an issue with the ash seal water pumps.

During closure construction activities in 2023, CCR was removed from the former BGS Ash Seal Pond and placed into the former BGS Main Ash Pond and the BGS Economizer Pond. The former BGS Ash Seal Pond has been backfilled with aggregate, finished with topsoil, seeded, and graded to drain stormwater into the condenser discharge channel without stormwater retention (Figure 2). The height and alignment of the embankments were not significantly changed during the closure construction activities.

The surface area of the former BGS Ash Seal Pond is approximately 5.7 acres and has an embankment height of approximately 12 feet from the crest to the toe of the downstream slope. The embankment crest is at elevation 534 feet, which is the same as the adjacent plant site grade and equivalent to the 100-year flood water elevation of the Mississippi River.

2.2 BGS Main Ash Pond

The former BGS Main Ash Pond was located southwest of the generating plant and west of the former BGS Ash Seal Pond. The CCR, prior to being sluiced to the former BGS Main Ash Pond, was originally managed in the former BGS Ash Seal Pond in 1968. In 1971, BGS managed CCR in the former BGS Upper Ash Pond. In 1980, the former BGS Main Ash Pond became the primary receiver of CCR, with the former BGS Upper Ash Pond becoming a downstream receiver.

Historically, the former BGS Main Ash Pond received bottom ash that was sluiced from the generating plant to the northeast corner of the former BGS Main Ash Pond. Most of the bottom ash settled out near the northeast corner and this bottom ash was recovered for beneficial reuse. Hydrated fly ash was also stored within the former BGS Main Ash Pond area prior to being sold as aggregate material for beneficial reuse.

The process water that was used to sluice the bottom ash into the former BGS Main Ash Pond was routed in a channel towards the west end of the former BGS Main Ash Pond. In the northwest corner of the Main Ash Pond the channel widened into a ponded area. From this ponded area the water discharged through two 15-inch diameter corrugated metal culverts beneath the generating plant entrance road and into a small channel in the southwest corner of the former BGS Upper Ash Pond, located on the north side of the generating plant entrance road.

During closure construction activities in 2023, the CCR was consolidated, leveled, graded, capped, finished with topsoil, and seeded. Stormwater from the former Main Ash Pond area sheet drains overland toward the west where it is discharged into the western ditch line without stormwater retention (Figure 2). The height and alignment of the embankments were not significantly changed during the closure construction activities.

The surface area of the former BGS Main Ash Pond is approximately 18.7 acres and has an embankment height of approximately 12 feet from the crest to the toe of the downstream slope. The embankment crest is at elevation 534, the same as the plant site grade and equivalent to the 100-year flood water elevation in the Mississippi River.

2.3 BGS Economizer Pond

The former BGS Economizer Pond was located west of the generating plant and north of the former BGS Main Ash Pond. In 1986, BGS constructed the former BGS Economizer Pond in the southern and eastern portions of the original footprint of the former BGS Upper Ash Pond. The Economizer Ash Pond impoundment was created from economizer ash that was deposited between 1986 and 2021, when coal use ceased. During operations, the embankment was at approximately elevation 548, which was higher than the embankments of the former BGS Upper Ash Pond.

Historically, the former BGS Economizer Pond received economizer ash. The economizer ash was sluiced from the generating plant to the east end of the former BGS Economizer Pond via a 10-inch diameter polyvinyl chloride pipe. The economizer ash settled out through the water column of the 0.4-acre BGS Economizer Pond while the water flowed to the west. The water discharged from the west side of the BGS Economizer Pond through an 18-inch diameter high-density polyethylene pipe into a stormwater and process water treatment channel located along the south side of the economizer embankment.

The stormwater and process water treatment channel received runoff from 8 acres surrounding the generating plant. The collected stormwater drained into a pump vault located at the toe of the downstream slope of the east embankment of the BGS Economizer Pond. Plant process water flowed through an oil/water separator and received influent flows from the plant floor drains and water treatment process water. After the oil/water separator, the process water discharged into the pump vault. The stormwater and process water were then pumped from the vault up to the stormwater treatment channel. The stormwater treatment channel flowed to the west along the south side of the economizer embankment until it discharged through an 18-inch diameter high-density polyethylene pipe located in the southwest corner of the economizer embankment. The water from the stormwater treatment channel discharged into a small channel in the southwest corner of the former BGS Upper Ash Pond located north of the generating plant entrance road.

During closure construction activities in 2023, the footprint of the former BGS Economizer Pond increased in size and height due to the consolidation of CCR materials from the former BGS Upper Ash Pond and the former BGS Ash Seal Pond. The CCR materials were graded, capped, finished with topsoil, and seeded. Stormwater runoff is now shed into a newly constructed stormwater basin within the former BGS Upper Ash Pond. There is no stormwater retention in the Economizer Ash Pond area. (Figure 2). The stormwater from the stormwater and process water pump vault has been rerouted to directly discharge into the BGS Lower Pond.

Currently, the total surface area of the former BGS Economizer Pond is approximately 14.6 acres and has an embankment height of approximately 30 feet from the crest to the toe of slope. The embankment crest maximum elevation is 564 feet.

2.4 BGS Upper Ash Pond

The former BGS Upper Ash Pond was located northwest of the generating plant and north of the former BGS Main Ash Pond. In 1971, BGS began managing CCR in the former BGS Upper Ash Pond. In 1980, the former BGS Main Ash Pond became the primary receiver of CCR and the former BGS Upper Ash Pond became a downstream receiver of the former BGS Main Ash Pond.

Historically, the former BGS Upper Ash Pond received influent flows from the former BGS Main Ash Pond, BGS Economizer Pond, and stormwater and process water flow from the generating plant. The influent flows all discharged into a small channel located in the southwest corner of the former BGS Upper Ash Pond. The channel was routed northeasterly along the south side of the gravel dike of the former BGS Upper Ash Pond until it discharged into the water body in the north side of the former BGS Upper Ash Pond.

From this water body, water discharged through a 24-inch wide precast concrete Parshall flume, where flow was measured, and into a concrete catch basin. The water in the catch basin flows through a 15-inch diameter polyvinyl chloride pipe and discharges into the BGS Lower Pond. The Lower Pond contains the facility's National Pollutant Discharge Elimination System (NPDES) Outfall 001. The water flowed through the NPDES Outfall 001 hydraulic structure, which consisted of cast-in-place weir box.

During closure construction activities in 2023, the footprint of the former BGS Upper Ash Pond was decreased in size due to the increase of footprint of the former BGS Economizer Pond. The CCR was removed from the majority of the former BGS Upper Ash Pond and consolidated into the former BGS Economizer Pond and the former BGS Main Ash Pond. The remaining area of the former BGS Upper Ash Pond is now a stormwater detention pond which has been reinforced with rip rap on the upstream and downstream embankments. The Parshall flume discharge structure remains in place (Figure 2 & Appendix B). The height and alignment of the external embankments were not significantly changed during the closure construction activities.

Currently, the total surface area of the former BGS Upper Ash Pond is approximately 10.6 acres and has an embankment height of approximately 10 feet from the crest to the toe of the downstream slope. The elevation of the embankments is 531 feet, 3 feet lower than the 100-year flood elevation of the Mississippi River. The embankment is armored with cobble size stone on the crest and both outer and inner embankment slopes to prevent erosion of the embankment during overtopping from extreme flood stage of the Mississippi River.

3. HYDROLOGIC AND HYDRAULIC CAPACITY- §257.82(a) and (b)

This Report provides hydrologic and hydraulic capacity information for the inflow design flood control systems which is to:

1. Adequately manage flow into each CCR unit during and following the peak discharge inflow of the specified design flood,
2. Adequately manage flow from each CCR unit to collect and control the peak discharge resulting from the inflow design flood; and,
3. Handle discharge from the CCR unit in accordance with NPDES regulations 40 CFR §257.3-3.

3.1 Hazard Classification and Design Storm

The 2023 Hazard Potential Classification analysis classified all four existing surface impoundments as low hazard potential. Therefore, the design storm used for all four existing surface impoundments is the 100-year return event SCS Type II 24-hour storm as designated in §257.82(a)(3)(iii). The total rainfall for the two design events selected from the National Oceanographic and Atmospheric Administration's (NOAA) probabilistic map for the BGS Site coordinates is 7.2 inches for the 100-year event (Appendix A).

3.2 Hydrologic and Hydraulic Capacity Methods

3.2.1 BGS Ash Seal Pond, BGS Main Ash Pond, & BGS Economizer Pond

The former BGS Ash Seal Pond, former BGS Main Ash Pond, and former BGS Economizer Pond underwent closure activities in 2023. These surface impoundments no longer can detain stormwater as the final slopes are graded to shed stormwater off the impoundments. The former BGS Ash Seal Pond area now drains to the condenser discharge channel. The former BGS Main Ash Pond area now drains to the lowland area to the south of the facility. The former BGS

Economizer Pond area now drains to the former BGS Upper Ash Pond. As result, these three impoundments no longer have hydrologic and hydraulic capacity and, therefore, calculations are not applicable.

3.2.2 BGS Upper Ash Pond

The former BGS Upper Ash Pond underwent construction closure activities in 2023. The CCR and all process water inflows were removed and now the former BGS Upper Ash Pond functions only as a stormwater detention pond. Based on discussions with the facility personnel, post closure construction activities, the normal water elevation is 524, which is approximately 4 feet below the invert of the Parshall flume elevation 528. For the purposes of this Report, the water level below the invert of the flume is considered the normal water elevation.

The former BGS Upper Ash Pond water elevation is influenced by the Mississippi River during flooding events as the berm elevation is approximately 3 feet below the 100-year flood elevation, therefore there are periods when the Mississippi River flood waters backflow into the former BGS Upper Ash Pond.

Since the normal water elevation is below the invert of the Parshall flume discharge elevation, the 100-year SCS Type II storm of 7.2 inches accumulates in the storage pool of the former BGS Upper Ash Pond. The capacity of the impoundment for the design storm was calculated by comparing the volume of rainfall produced by the design storm to the capacity of the impoundment above the normal operating elevation.

3.3 Hydrologic and Hydraulic Capacity Input and Assumptions

This section identifies the inputs and assumptions for the hydrologic and hydraulic capacity calculations for the former BGS Upper Ash Pond. Since the storm routing is by full containment of the stormwater volume, the following simplifying assumptions are made in the analysis of the impoundment's capacity to contain the storm without distress:

- The full volume of rainfall accumulates into the impoundment without consideration of the infiltration within the drainage area.
- The available volume is calculated as the area of the impoundment at normal water operating elevation projected vertically without considering the increase in volume due to the slope of the pond banks.

4. Inflow Design Flood Control System Plan

The normal water elevation for the former BGS Upper Ash Pond is 524 feet. During the design storm, the former BGS Upper Ash Pond accumulates 25.12 acre-feet of water. At the end of the storm, the water elevation in the former BGS Upper Ash Pond would be approximately 525.4 feet with 5.6 feet of freeboard. The calculated volumes and storage elevations are included in Appendix C.

5. QUALIFIED PROFESSIONAL ENGINEER CERTIFICATION

To meet the requirements of 40 CFR 257.82(c)(5), I Mark W. Loerop hereby certify that I am a licensed professional engineer in the State of Iowa; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in 40 CFR 257.82.

By: ______________________

Name: MARK LOEROP

Date: JUNE 15, 2026

LICENSED PROFESSIONAL ENGINEER
MARK W. LOEROP
22197
IOWA

hard hat SERVICES

solutions and action

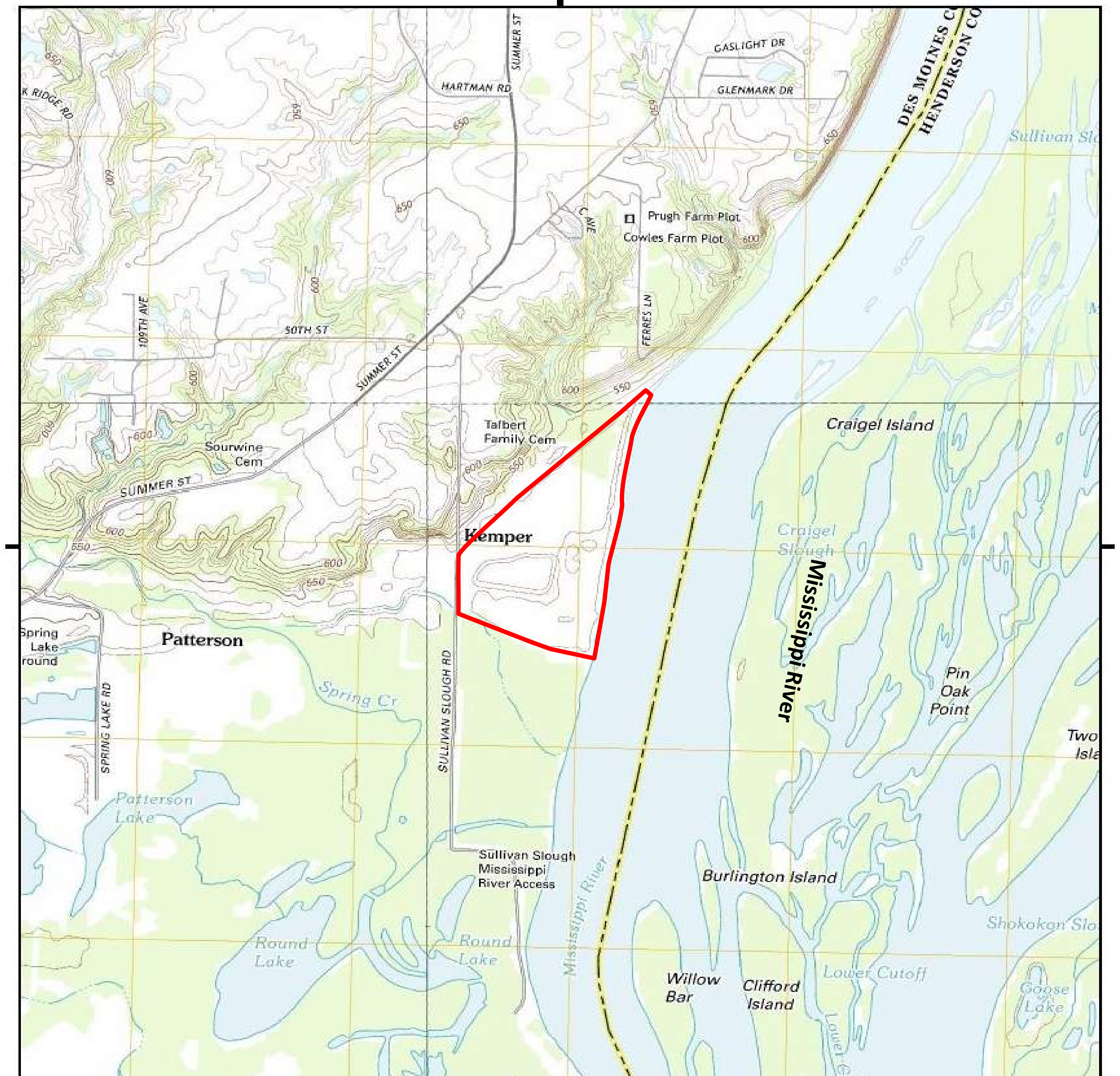
FIGURES

Alliant Energy
Interstate Power and Light Company
Burlington Generating Station
Burlington, Iowa

Inflow Design Flood Control System Plan

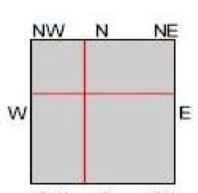
Historical Topo Map

2012, 2013



Miles 0.25 0.5 1 1.5

This report includes information from the following map sheet(s).

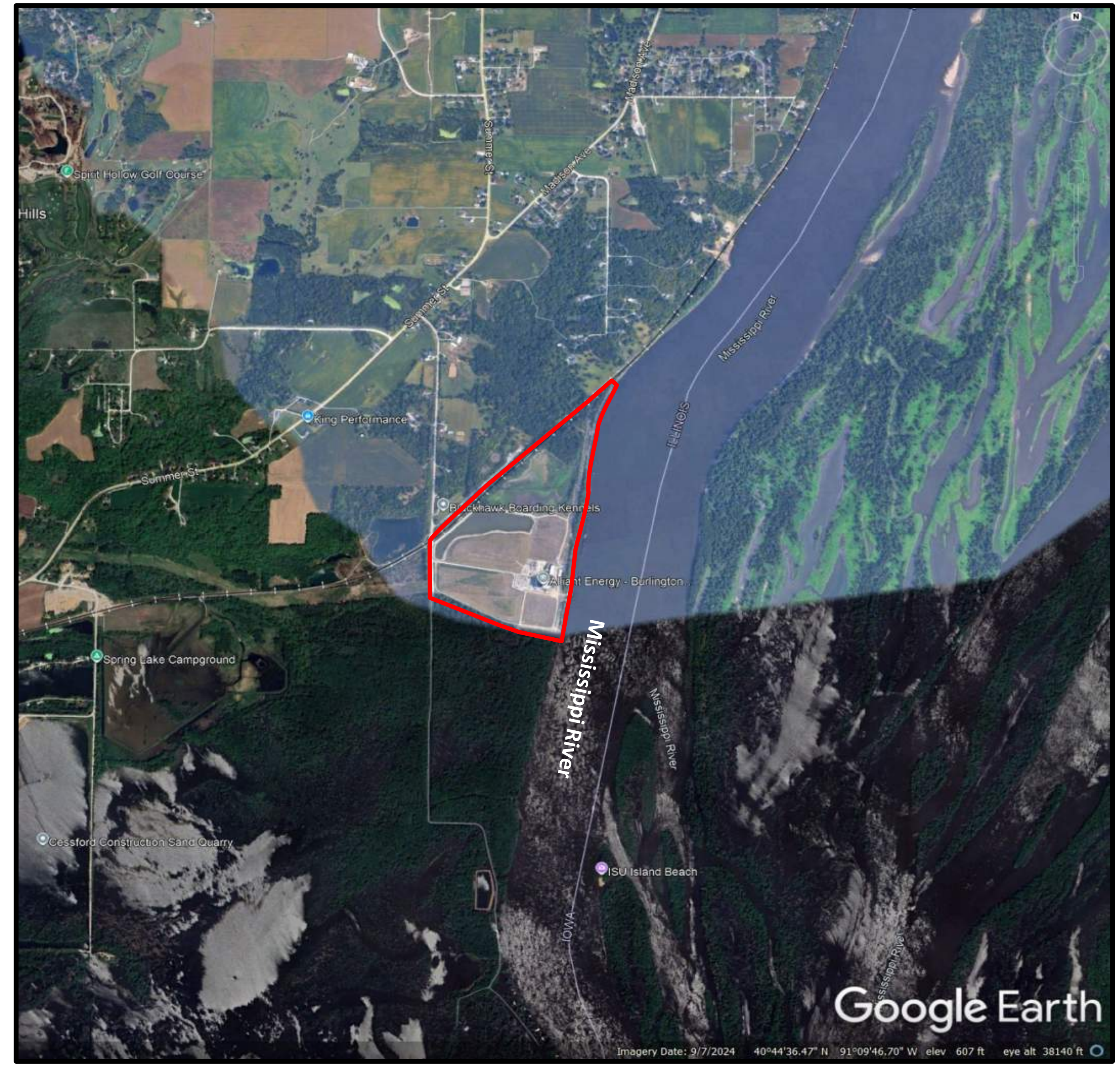


TP, Lomax, 2012, 7.5-minute
NE, Burlington, 2013, 7.5-minute
SW, Dallas City, 2012, 7.5-minute
NW, West Burlington, 2013, 7.5-minute

SITE NAME: Burlington Generating Station
ADDRESS: 4282 Sullivan Slough Road
Burlington, IA 52601
CLIENT: Environmental Site Assessors

4555570 - 3 page 4

Aerial Photo 9/7/2024



Approximate Property Boundary

hard hat SERVICES	**Interstate Power and Light Company** Facility Location Map Burlington Generating Station; Burlington, Iowa no scale	Drawing Figure 1 Date 5/13/2026

Stormwater Route

hard hat™ SERVICES

Interstate Power and Light Company

Stormwater Routing Plan

Burlington Generating Station; Burlington, Iowa

no scale

Drawing	Date
Figure 2	5/13/2026

APPENDIX A – NOAA Storm Frequency

Alliant Energy
Interstate Power and Light Company
Burlington Generating Station
Burlington, Iowa

Inflow Design Flood Control System Plan

NOAA Atlas 14, Volume 8, Version 2
Location name: Burlington, Iowa, USA*
Latitude: 40.7426°, Longitude: -91.1201°
Elevation: 549 ft**

* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

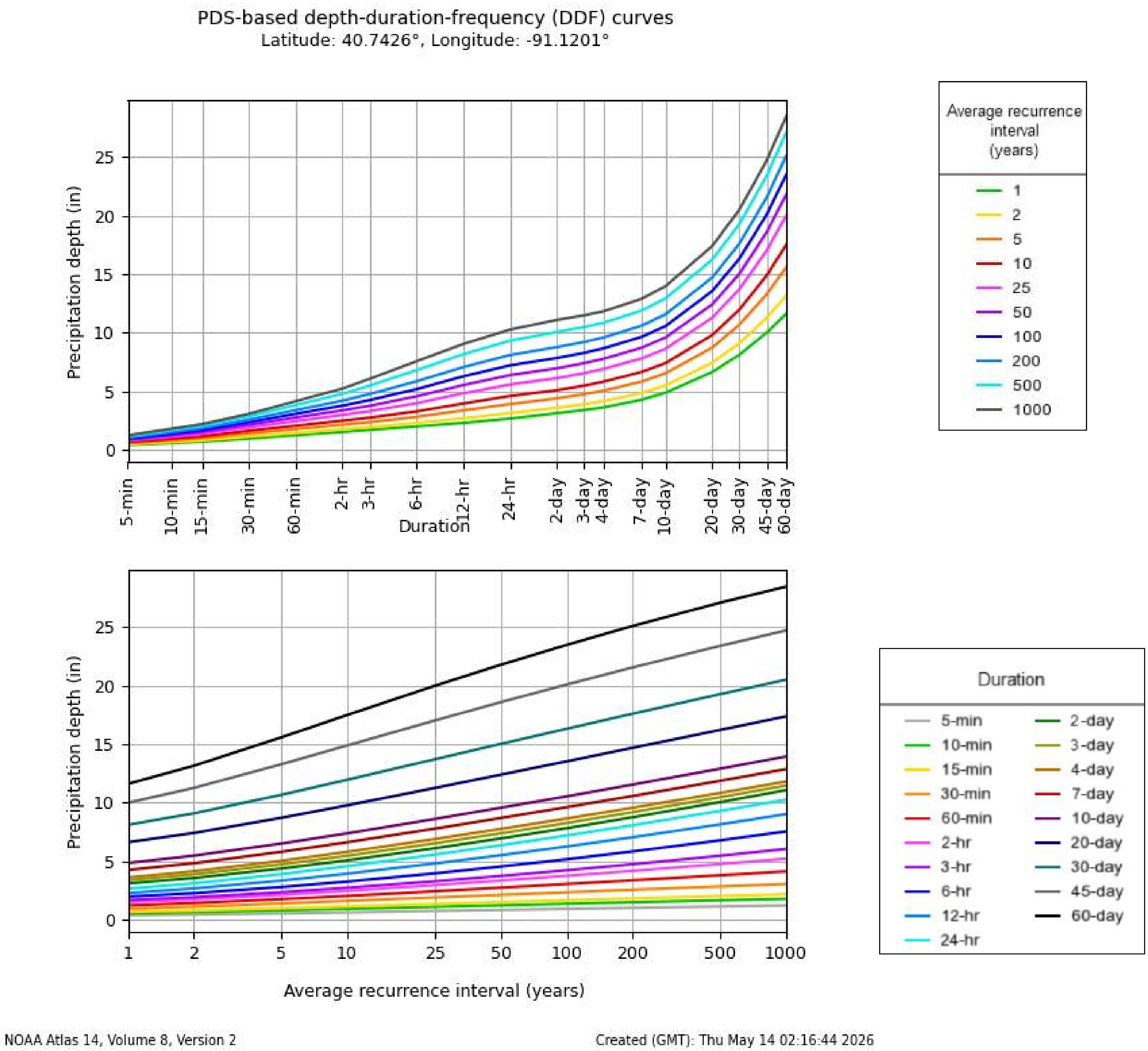
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.384** (0.326-0.458)	**0.449** (0.381-0.537)	**0.555** (0.470-0.664)	**0.642** (0.541-0.770)	**0.760** (0.620-0.924)	**0.849** (0.680-1.04)	**0.937** (0.728-1.16)	**1.02** (0.769-1.29)	**1.14** (0.826-1.46)	**1.22** (0.869-1.59)
10-min	**0.562** (0.477-0.671)	**0.658** (0.559-0.786)	**0.813** (0.688-0.973)	**0.940** (0.792-1.13)	**1.11** (0.908-1.35)	**1.24** (0.995-1.52)	**1.37** (1.07-1.70)	**1.50** (1.12-1.89)	**1.67** (1.21-2.14)	**1.79** (1.27-2.32)
15-min	**0.685** (0.582-0.818)	**0.802** (0.681-0.958)	**0.991** (0.840-1.19)	**1.15** (0.966-1.38)	**1.36** (1.11-1.65)	**1.52** (1.21-1.86)	**1.67** (1.30-2.08)	**1.83** (1.37-2.31)	**2.04** (1.48-2.61)	**2.19** (1.55-2.83)
30-min	**0.952** (0.810-1.14)	**1.12** (0.953-1.34)	**1.39** (1.18-1.67)	**1.62** (1.36-1.94)	**1.91** (1.56-2.32)	**2.14** (1.71-2.62)	**2.36** (1.83-2.92)	**2.57** (1.93-3.24)	**2.85** (2.07-3.65)	**3.06** (2.17-3.96)
60-min	**1.23** (1.05-1.47)	**1.43** (1.22-1.71)	**1.77** (1.50-2.12)	**2.05** (1.73-2.46)	**2.44** (2.00-2.98)	**2.75** (2.20-3.38)	**3.06** (2.38-3.81)	**3.38** (2.54-4.27)	**3.81** (2.77-4.89)	**4.14** (2.94-5.36)
2-hr	**1.51** (1.30-1.79)	**1.75** (1.49-2.07)	**2.14** (1.83-2.54)	**2.48** (2.10-2.95)	**2.97** (2.46-3.61)	**3.36** (2.72-4.11)	**3.76** (2.96-4.66)	**4.18** (3.18-5.26)	**4.77** (3.50-6.08)	**5.22** (3.74-6.71)
3-hr	**1.69** (1.45-1.99)	**1.93** (1.66-2.28)	**2.36** (2.02-2.78)	**2.74** (2.33-3.23)	**3.29** (2.75-4.00)	**3.75** (3.06-4.58)	**4.24** (3.35-5.24)	**4.75** (3.63-5.96)	**5.48** (4.04-6.98)	**6.06** (4.36-7.74)
6-hr	**1.99** (1.72-2.32)	**2.28** (1.98-2.66)	**2.80** (2.42-3.28)	**3.27** (2.81-3.83)	**3.97** (3.34-4.79)	**4.55** (3.75-5.52)	**5.18** (4.13-6.36)	**5.84** (4.50-7.29)	**6.79** (5.06-8.59)	**7.55** (5.48-9.58)
12-hr	**2.29** (2.00-2.65)	**2.68** (2.34-3.10)	**3.35** (2.92-3.89)	**3.95** (3.42-4.58)	**4.81** (4.07-5.75)	**5.52** (4.57-6.62)	**6.26** (5.04-7.62)	**7.06** (5.47-8.71)	**8.16** (6.12-10.2)	**9.03** (6.60-11.4)
24-hr	**2.66** (2.34-3.04)	**3.11** (2.74-3.57)	**3.90** (3.42-4.48)	**4.58** (4.00-5.27)	**5.57** (4.74-6.58)	**6.37** (5.31-7.57)	**7.20** (5.83-8.68)	**8.08** (6.32-9.88)	**9.30** (7.03-11.5)	**10.3** (7.56-12.8)
2-day	**3.11** (2.76-3.53)	**3.58** (3.17-4.06)	**4.38** (3.87-4.98)	**5.08** (4.47-5.80)	**6.11** (5.25-7.16)	**6.95** (5.84-8.19)	**7.83** (6.40-9.35)	**8.76** (6.91-10.6)	**10.1** (7.67-12.4)	**11.1** (8.24-13.7)
3-day	**3.38** (3.01-3.82)	**3.88** (3.46-4.39)	**4.74** (4.20-5.36)	**5.48** (4.83-6.21)	**6.54** (5.63-7.59)	**7.39** (6.24-8.64)	**8.27** (6.78-9.81)	**9.20** (7.28-11.1)	**10.5** (8.02-12.8)	**11.5** (8.58-14.1)
4-day	**3.61** (3.23-4.06)	**4.15** (3.70-4.67)	**5.04** (4.49-5.68)	**5.81** (5.15-6.57)	**6.90** (5.96-7.97)	**7.77** (6.57-9.03)	**8.66** (7.12-10.2)	**9.58** (7.60-11.5)	**10.8** (8.32-13.2)	**11.8** (8.87-14.5)
7-day	**4.26** (3.83-4.75)	**4.84** (4.35-5.40)	**5.81** (5.20-6.50)	**6.63** (5.91-7.44)	**7.79** (6.76-8.91)	**8.70** (7.40-10.0)	**9.63** (7.96-11.3)	**10.6** (8.45-12.6)	**11.9** (9.18-14.4)	**12.9** (9.73-15.7)
10-day	**4.86** (4.39-5.40)	**5.48** (4.95-6.09)	**6.52** (5.86-7.25)	**7.39** (6.61-8.25)	**8.61** (7.51-9.80)	**9.57** (8.18-11.0)	**10.6** (8.76-12.3)	**11.6** (9.27-13.7)	**12.9** (10.0-15.5)	**14.0** (10.6-17.0)
20-day	**6.63** (6.03-7.29)	**7.42** (6.74-8.17)	**8.71** (7.90-9.60)	**9.78** (8.83-10.8)	**11.3** (9.88-12.7)	**12.4** (10.7-14.1)	**13.5** (11.3-15.6)	**14.7** (11.9-17.2)	**16.2** (12.7-19.3)	**17.4** (13.3-20.9)
30-day	**8.11** (7.42-8.88)	**9.10** (8.31-9.96)	**10.7** (9.73-11.7)	**12.0** (10.9-13.2)	**13.7** (12.1-15.3)	**15.0** (13.0-16.9)	**16.3** (13.7-18.7)	**17.6** (14.3-20.5)	**19.3** (15.1-22.8)	**20.5** (15.8-24.6)
45-day	**10.0** (9.19-10.9)	**11.3** (10.3-12.3)	**13.3** (12.2-14.5)	**14.9** (13.6-16.3)	**17.0** (15.0-18.8)	**18.6** (16.1-20.8)	**20.1** (16.9-22.8)	**21.6** (17.6-24.9)	**23.4** (18.5-27.5)	**24.7** (19.1-29.5)
60-day	**11.6** (10.7-12.6)	**13.2** (12.1-14.3)	**15.6** (14.3-16.9)	**17.5** (16.0-19.1)	**20.0** (17.7-22.0)	**21.8** (18.9-24.2)	**23.5** (19.8-26.5)	**25.1** (20.5-28.8)	**27.1** (21.4-31.7)	**28.5** (22.1-33.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

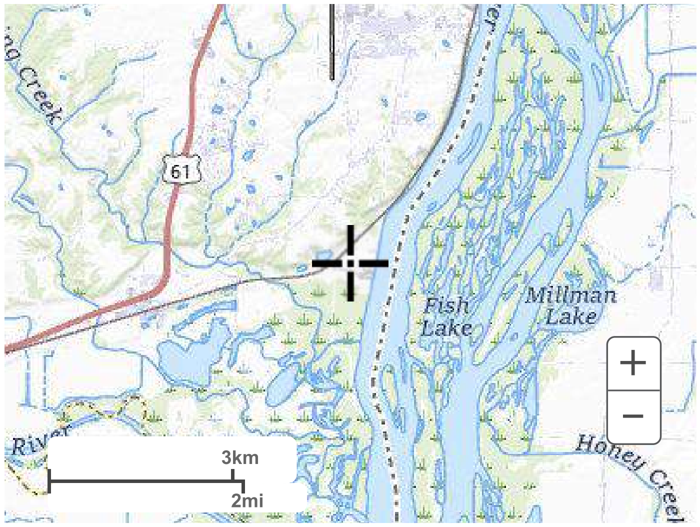
PF graphical



Back to Top

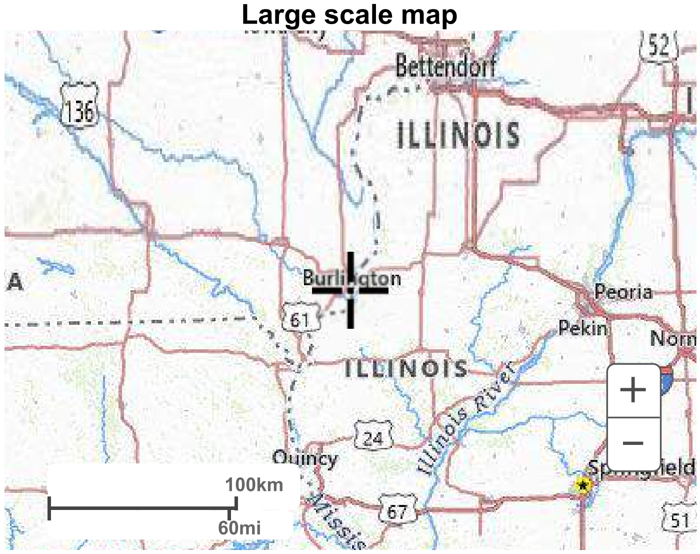
Maps & aerials

Small scale terrain



Large scale terrain

Large scale map



Large scale aerial

Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX B – Outfall Photos

Alliant Energy
Interstate Power and Light Company
Burlington Generating Station
Burlington, Iowa

Inflow Design Flood Control System Plan

Parshall Flume

Downstream Embankment

Discharge Pipe

Inside Discharge Structure

hard hat SERVICES

Interstate Power and Light Company
Outfall Photos
Burlington Generating Station; Burlington, Iowa
no scale

Drawing
Appendix B
Date
5/13/2026

solutions and action

APPENDIX C – Hydraulic Analysis

Alliant Energy
Interstate Power and Light Company
Burlington Generating Station
Burlington, Iowa

Inflow Design Flood Control System Plan

HARD HAT SERVICES™
Engineering, Construction and Management Solutions

SHEET NO. 1 OF 1
PROJECT NO. 154.018.029.001
DATE 5/22/2026
BY MWL CKD ✓

BGS STORM WATER CAPACITY CALCULATIONS

GIVENS:

- BGS UPPER ASH POND CREST ELEV. 531
- BGS UPPER ASH POND PARSHALL FLUME 528
- BGS UPPER ASH POND NORMAL H_2O ELEV. 524
- 100 YR. SCS TYPE II STORM IS 7.2 INCHES
- ECONOMIZER POND 14.6 ACRES
- UPPER ASH POND 10.6 ACRES

ASSUMPTIONS:

- FULL VOLUME OF RAINFALL ACCUMULATES WITHOUT CONSIDERATION OF INFILTRATION
- NO CONSIDERATION OF VOLUME INCREASE WITH SIDE SLOPES.

CALCULATIONS:

TOTAL DRAINAGE AREA = ECONOMIZER POND + UPPER ASH POND

DA_{TOTAL} = 14.6 ACRES + 10.6 ACRES
= 25.2 ACRES

100 YR-24 STORM VOLUME

7.2" / 12"/FOOT = 0.6 FT

(0.6')(25.2 ACRES) = 15.12 ACRE/FT

STORAGE HEIGHT

15.12 ACRE/FT / 10.6 ACRES = 1.43 FT

FINAL STORM ELEV

NORMAL ELEV + STORAGE HEIGHT
524 + 1.43 = 525.4 FT

FREEBOARD = 531 − 525.4 = 5.6 FT ✓