

Illinois Power Resources Generating, LLC

DUCK CREEK POWER STATION
FULTON COUNTY, ILLINOIS

Emergency Action Plan (EAP)

40 CFR § 257.73(a)(3)

**Coal Combustion Residual (CCR) Impoundments
& Related Facilities**

- Ash Pond No. 1 (NID # IL50715)
- Ash Pond No. 2 (NID # IL50014)
- Gypsum Management Facility (GMF) Pond (NID # IL50573)

Revision Date: April 13, 2017

Qualified Professional Engineer Certification; Emergency Action Plan for the Duck Creek Power Station Ash Pond No. 1, Ash Pond No. 2, and the GMF Pond.

In accordance with 40 CFR 257.73(a)(3)(iv), the owner or operator of a CCR unit that is required to prepare a written Emergency Action Plan under 40 CFR 257.73(a)(3) must obtain a certification from a qualified professional engineer stating that the written Emergency Action Plan meets the requirements of 40 CFR 257.73(a)(3).

I, Matthew Hoy, being a Professional Engineer in good standing in the State of Illinois, do hereby certify, to the best of my knowledge, information, and belief that:

1. the information contained in this Emergency Action Plan was prepared in accordance with the accepted practice of engineering; and
2. this Emergency Action Plan meets the requirements of 40 CFR 257.73(a)(3).

SIGNATURE _____



DATE _____

4/13/2017

ADDRESS: Stantec Consulting Services Inc.
1859 Bowles Avenue Suite 250
Fenton MO 63026-1944

TELEPHONE: (636) 343-3880



**DUCK CREEK POWER STATION
EMERGENCY ACTION PLAN
CCR IMPOUNDMENTS & RELATED FACILITIES**

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**DUCK CREEK POWER STATION
EMERGENCY ACTION PLAN
CCR IMPOUNDMENTS & RELATED FACILITIES**

1 STATEMENT OF PURPOSE

The Duck Creek Power Station (Station) is located near Canton in Fulton County, Illinois. The location is shown in Figure 1-1. The Station is a coal-fired electricity producing power plant owned and operated by Illinois Power Resources Generating, LLC, a subsidiary of Dynegy. This Emergency Action Plan (EAP) was prepared in accordance with 40 CFR § 257.73(a)(3) and covers the following Coal Combustion Residual (CCR) surface impoundments located at the site:

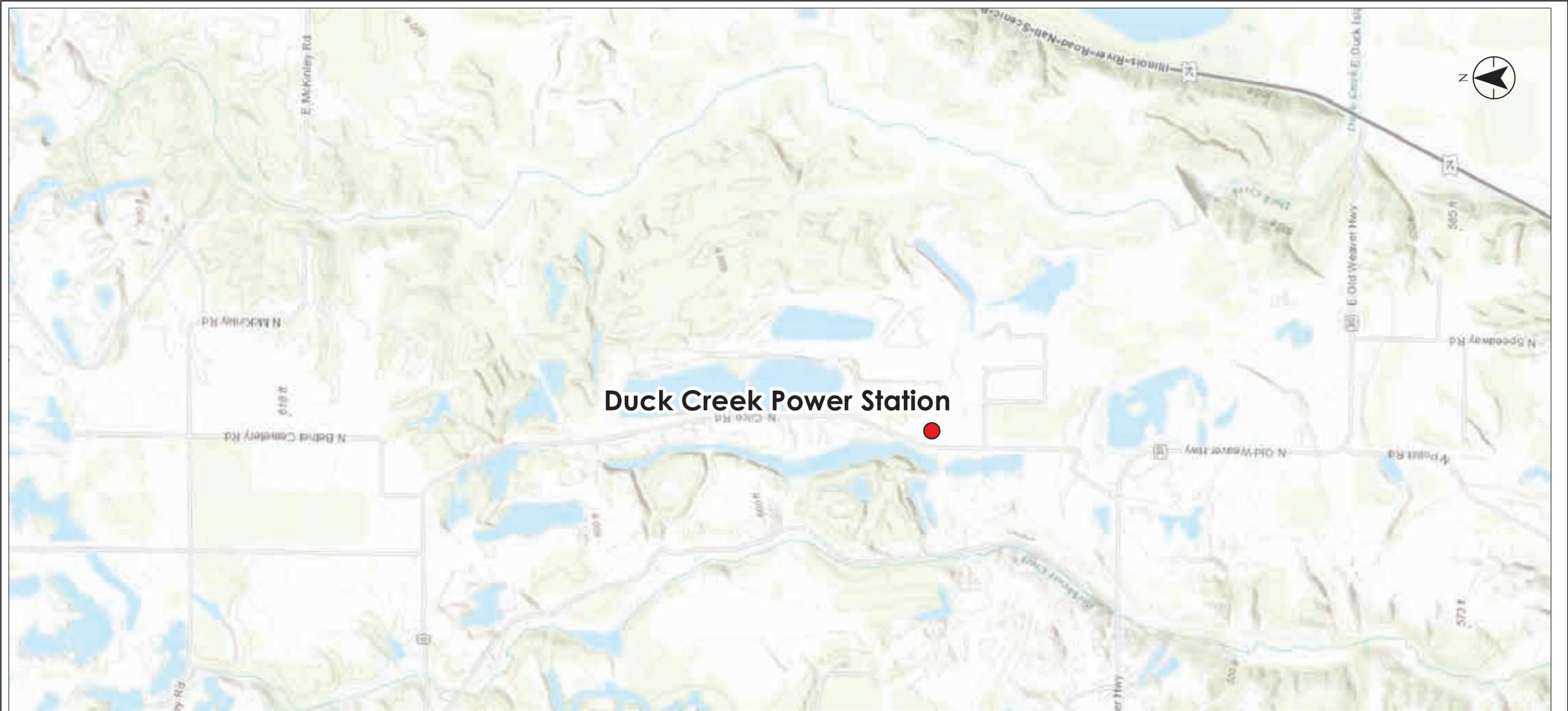
- Ash Pond No. 1
- Ash Pond No. 2
- Gypsum Management Facility (GMF) Pond

The locations of these impoundments are shown in Figure 1-2. Section 6 of this EAP includes a description of each impoundment.

The purpose of this Emergency Action Plan (EAP) is to:

1. Safeguard the lives, as well as to reduce property damage, of citizens living within potential downstream flood inundation areas of CCR impoundments and related facilities at the Duck Creek Power Station.
2. Define the events or circumstances involving the CCR impoundments and related facilities at the Duck Creek Power Station that represent atypical operating conditions that pose a safety hazard or emergency and how to identify those conditions.
3. Define responsible persons, their responsibilities, and notification procedures in the event of a safety emergency.
4. Provide contact information of emergency responders.
5. Identify emergency actions in the event of a potential or imminent failure of the impoundments.
6. Identify the downstream area that would be affected by failure of the impoundments.
7. Provide for effective facility surveillance, prompt notification to local Emergency Management Agencies, citizen warning and notification responses, and preparation should an emergency occur.

Information provided by Dynegy was utilized and relied upon in preparation of this report.



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Project Location: 175605019
 Latitude: 40.466181 Prepared by CAJ on 2017-03-23
 Longitude: -89.984236 Technical Review by PV on 2017-03-23
 Fulton County, Illinois Independent Review by NS on 2017-03-23

Client/Project
 Duck Creek Power Station
 Emergency Action Plan

Figure No.

1-1

Title

Location Map

Notes

1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
2. Aerial Source: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO,
3. USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User

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Legend

CCR Surface Impoundment Boundary



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Project Location: 175605019
 Latitude: 40.466181 Prepared by CAJ on 2017-03-16
 Longitude: -89.984236 Technical Review by PV on 2017-03-16
 Fulton County, Illinois Independent Review by NS on 2017-03-16

Client/Project: Duck Creek Power Station
 Emergency Action Plan

Figure No.

1-2

Title

CCR Impoundments

Notes
 1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
 2. Aerial Source: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA,
 3. USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community 2015 NAIP Imagery

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2 COMMUNICATION

To facilitate understanding among everyone involved in implementing this EAP, four response levels are used to identify the condition of an impoundment. These are:

Response Levels:

- **Level 0:** Normal conditions and routine operations, including surveillance and initial investigation of unusual conditions and effects of storm events.
- **Level 1:** Potentially hazardous condition exists, requiring investigation and possible corrective action.
- **Level 2:** Potential failure situation is developing; possible mode of failure is being assessed; corrective measures are underway.
- **Level 3:** Failure is occurring or is imminent, public protective actions are required.

The 4-Step Incident Response Process is outlined in Figure 2-1. This should be used in conjunction with the Notification Flowchart (Figure 2-2) and EAP Decision Tree (Figure 2-3). Section 4 provides guidance tables for determining Response Levels and a table providing emergency actions to be taken given various situations. Table 2-1 lists contact information for the emergency responders.

Figure 2-1. Summary/Sequence of Tasks 4-Step Incident Response Process

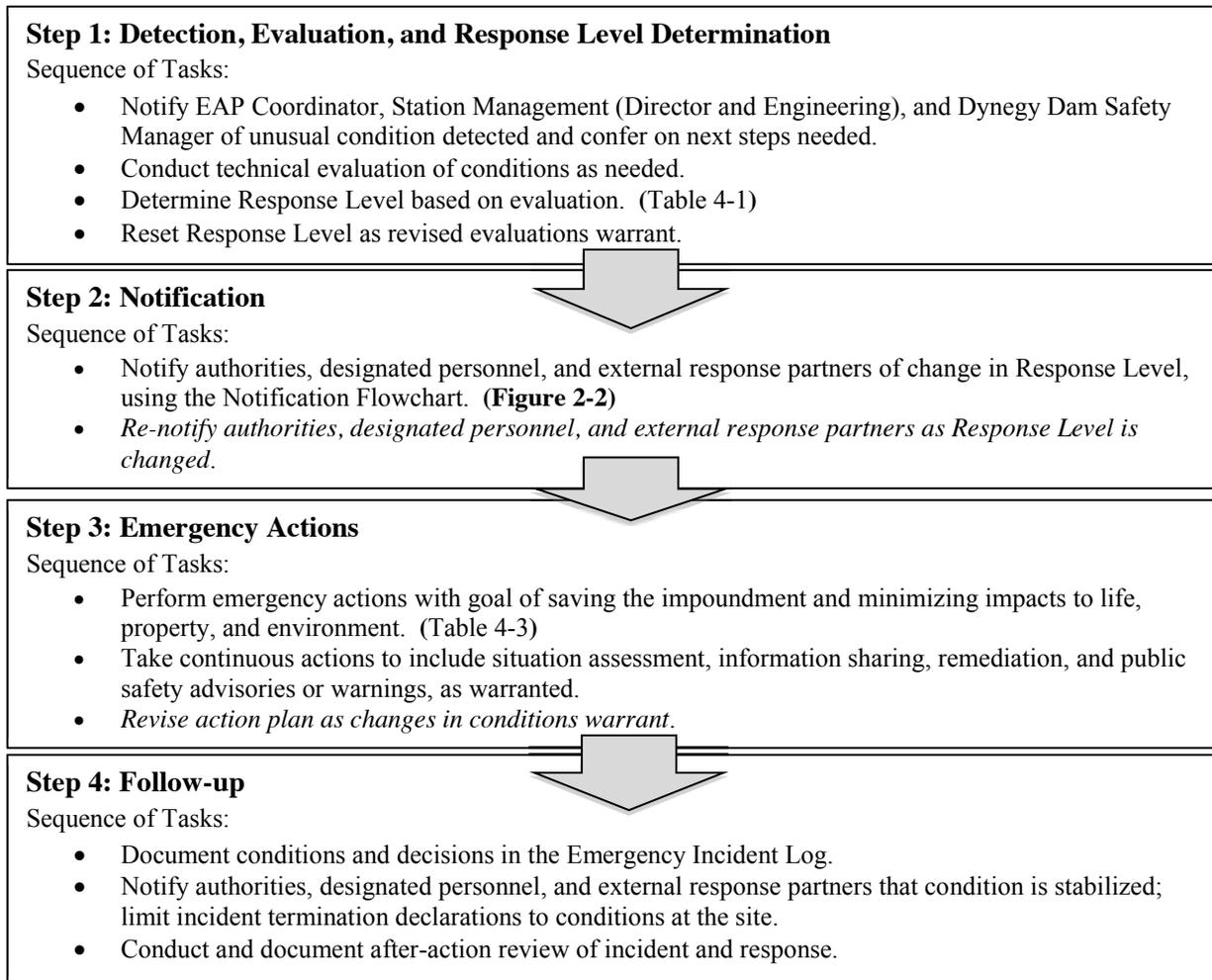


Figure 2-2. Notification Flowchart

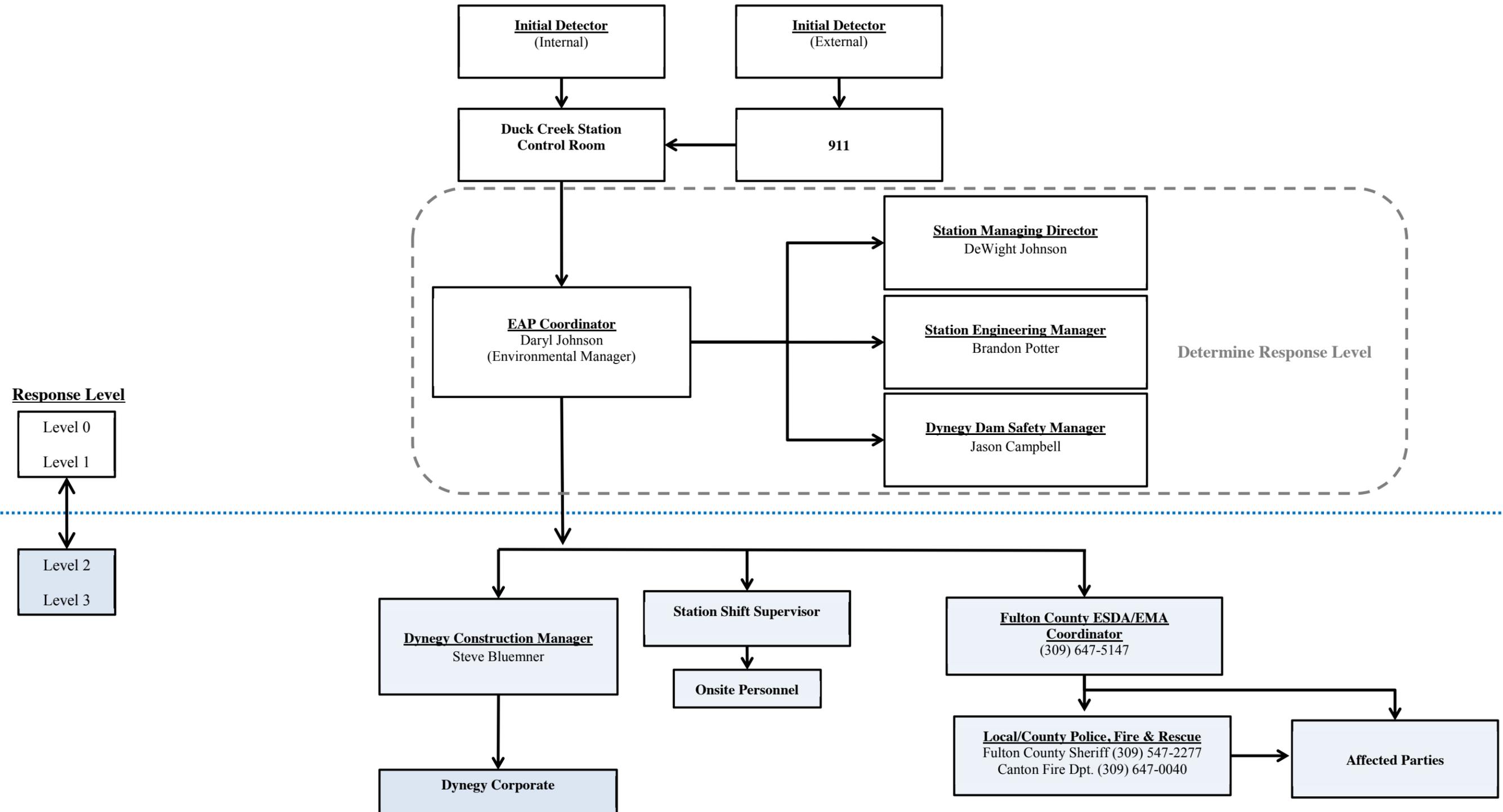


Figure 2-3. EAP Response Process Decision Tree

Note: At any given below, if failure is imminent or actively occurring CALL 911 IMMEDIATELY to notify emergency responders and then continue with process afterwards.

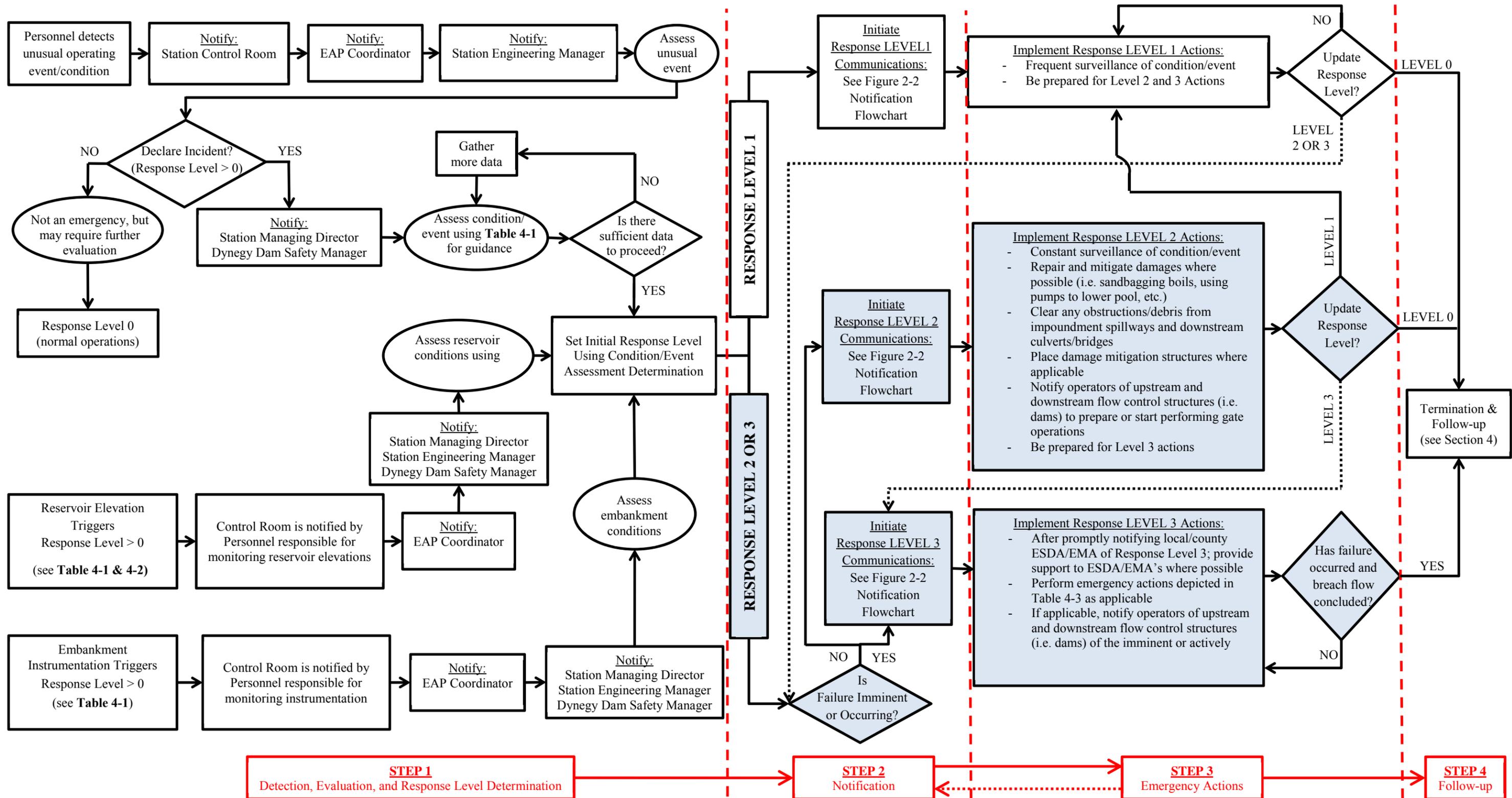


Table 2-1. EAP Emergency Responders

Position / Entity	Contact Information		
Internal Contacts			
Duck Creek Power Station	Contact		
Managing Director	DeWight Johnson		
EAP Coordinator (Environmental Manager)	Daryl Johnson	(309) 668-3816	
Engineering Manager	Brandon Potter		
Control Room		(309) 668-3813	
Dynegy Corporate Operations	Contact		
Dam Safety Manager	Jason Campbell	(618) 792-8488	
Construction Management	Steve Bluemner		
External Contacts			
Local/County ESDA/EMA, Police, & Fire	Contact	Phone #	Alternate Phone #
Fulton County Sheriff	Jeff Standard	(309) 547-2277	911
Fulton County ESDA/EMA	Chris Helle	(309) 224-7701	
City of Canton Police Department		(309) 647-5131	
City of Canton Fire Department	Tom Shubert	(309) 647-0040	
Fulton County Ambulance		(309) 647-5147	
State Emergency Management Agencies & Organizations	Contact	Phone #	Alternate Phone #
IDNR-OWR Dam Safety Section Manager	Paul Mauer	(217) 782-4427	
Rice Lake State Fish & Wildlife Area	Bill Douglas	(309) 647-9184	(309) 338-0496
Illinois Conservation Police		(309) 338-1017	
Illinois State Police		(309) 833-4046	

3 EAP ROLES AND RESPONSIBILITIES

Table 3-1 provides a summary of the EAP roles during an emergency event.

Table 3-1. Summary of EAP Roles

Entity	Role Description
Dynergy Emergency Response Team (ERT)	<p>ERT: Dynergy personnel responsible for EAP implementation, distribution, updates/maintenance, and training activities. The <u>ERT</u> is comprised of the following roles;</p> <ol style="list-style-type: none"> 1. Dynergy Corporate: Dynergy corporate entity, committee, team, or position with relevant responsibility for a given generating station. 2. Station Management: Personnel responsible for day-to-day operation and management of the Station. 3. Dam Safety Manager: Personnel that is most knowledgeable about the design and technical operation of facilities at a given Station. 4. EAP Coordinator: Personnel responsible for implementing the EAP and associated activities. <p style="text-align: center;"><u>Emergency Event – EAP Responsibilities</u></p> <ol style="list-style-type: none"> 1. Respond to emergencies at the Station. 2. Verify and assess emergency conditions. 3. Notify and coordinate as appropriate with participating emergency services disaster agencies or emergency management agencies (ESDA/EMA’s), emergency responders, regulatory agencies, and all other entities involved or affected by this EAP. 4. Take corrective action at the Station. 5. Declare termination of emergencies at the Station.
Fulton County ESDA/EMA	<ol style="list-style-type: none"> 1. Receive Response Level reports from <u>Dynergy Corporate</u> through <u>EAP Coordinator</u>. 2. Coordinate emergency response activities with local authorities: police, fire and rescue, etc. 3. Coordinate notification of public as necessary through established channels, which may include door-to-door contact. 4. Coordinate notification activities to affected parties within inundation areas. 5. Evaluate risk to areas beyond the inundation areas, communicate needs to the <u>Dynergy Corporate</u> and/or <u>EAP Coordinator</u>, and coordinate aid as appropriate. 6. Responsible for declaring termination of an emergency condition off-site upon receiving notification of an emergency status termination from the <u>Dynergy Corporate</u>. 7. If necessary, coordinate with <u>State ESDA/EMA</u>.
Canton Police, Fire, and Rescue	<ol style="list-style-type: none"> 1. Receive alert status reports from the <u>ERT</u> or the Fulton County <u>ESDA/EMA</u>. 2. If necessary, notify affected parties and general public within inundation areas (see Section 7). 3. Render assistance to Fulton County <u>ESDA/EMA</u>, as necessary. 4. Render assistance to <u>Dynergy Corporate</u> and <u>Station Management</u>, as necessary.
Fulton County Police, Fire and Rescue, and Emergency Services	<ol style="list-style-type: none"> 1. Receive alert status reports from the <u>ERT</u> or the Fulton County <u>ESDA/EMA</u>. 2. If necessary, notify affected parties within the inundation area. 3. Provide mutual aid to other affected areas, if requested and able.

4 EAP RESPONSE

The 4-Step Incident Response Process is shown in Figure 2-1. The Decision Tree shown in Figure 2-3 provides a flowchart for the various elements of the response process. Upon reaching Step 4 of the response process (termination and follow-up), the EAP Coordinator is responsible for notifying the ESDA/EMA's that the condition of the dam/impoundment has been stabilized. The purpose of this section is to provide specific information that can be used during a response. This information is provided in the following tables:

- Table 4-1 provides guidance for determining the response level.
- Table 4-2 provides impoundment pool level trigger elevations.
- Table 4-3 lists emergency actions to be taken depending on the situation.

Table 4-1. Guidance for Determining the Response Level

Event	Situation	Response Level
Spillway flow (see Table 4-2 for relevant elevations)	Primary spillway flow is not causing active erosion and impoundment water surface elevation is below auxiliary spillway crest elevation (if equipped).	Level 0
	Impoundment water surface elevation is at or above auxiliary spillway crest elevation (if equipped). No active erosion caused by spillway flow.	Level 1
	Spillway flow actively causing minor erosion that is not threatening the control section or dam/impoundment stability.	Level 2
	Spillway flow that could result in flooding of people downstream if the reservoir level continues to rise.	Level 2
	Abnormal operation of the spillway system due to blockage or damage that could lead to flooding.	Level 2
	Spillway flow actively eroding the soil around the spillway that is threatening the control section (e.g. undermining) or dam/impoundment stability.	Level 3
	Spillway flow that is flooding people downstream.	Level 3
Embankment Overtopping (see Table 4-2 for relevant elevations)	Impoundment water surface elevation at or below typical normal pool fluctuation elevation.	Level 0
	Impoundment water surface elevation above typical high pool fluctuation elevation.	Level 1
	Impoundment water surface elevation within 2 feet of the embankment crest elevation	Level 2
	Impoundment water surface elevation at or above embankment crest elevation.	Level 3
Seepage	New seepage areas in or near the dam/impoundment with clear flow.	Level 1
	New seepage areas with cloudy discharge or increasing flow rate.	Level 2
	Heavy seepage with active erosion, muddy flow, and/or sand boils.	Level 3
Sinkholes	Observation of new sinkhole in impoundment area or on embankment.	Level 2
	Rapidly enlarging sinkhole and/or whirlpool in the impoundment.	Level 3
Embankment cracking	New cracks in the embankment greater than ¼ inch wide without seepage.	Level 1
	Any crack in the embankment with seepage.	Level 2
	Enlarging cracks with muddy seepage.	Level 3

Table 4-1. Guidance for Determining the Response Level

Event	Situation	Response Level
Embankment movement	Visual signs of movement/slippage of the embankment slope.	Level 1
	Detectable active movement/slippage of the embankment slope or other related effects (tension cracking, bulges/heaves, etc.) that could threaten the integrity of the embankment.	Level 2
	Sudden or rapidly proceeding slides of the embankment slopes.	Level 3
Embankment Monitoring Equipment (piezometers, inclinometers, surface displacement mounts, etc.)	Instrumentation readings beyond historic normal.	Level 1
	Instrumentation readings indicate the embankment is susceptible to failure.	Level 2
	Instrumentation readings indicate embankment is at threshold of failure or is currently failing.	Level 3
Earthquake or other event	Measurable earthquake felt or reported on or within 100 miles of the impoundment.	Level 1
	Earthquake or other event resulting in visible damage to the impoundment or appurtenances.	Level 2
	Earthquake or other event resulting in uncontrolled release of water or materials from the impoundment.	Level 3
Security threat	Verified bomb threat or other physical threat that, if carried out, could result in damage to the impoundment.	Level 2
	Detonated bomb or other physical damage that has resulted in damage to the impoundment or appurtenances.	Level 3
Sabotage/ vandalism	Damage to impoundment or appurtenance with no impact to the functioning of the impoundment.	Level 1
	Modification to the impoundment or appurtenances that could adversely impact the functioning of the impoundment. This would include unauthorized operation of spillway facilities.	Level 2
	Damage to impoundment or appurtenances that has resulted in seepage flow.	Level 2
	Damage to impoundment or appurtenances that has resulted in uncontrolled water release.	Level 3

Table 4-2. Impoundment Trigger Elevations

Impoundment	Embankment Crest Elevation	Auxiliary Spillway Crest Elevation	Normal Pool Fluctuation	
			Typical	High
Ash Pond No. 1	625 ft.	Not Applicable	622 ft.	623.5 ft.
Ash Pond No. 2	640 ft.	Not Applicable	630 ft.	635 ft.
GMF Pond	620 ft.	Not Applicable	616 ft.	618 ft.

Notes:

*Elevation estimated from Digital Elevation Model (DEM) developed by the Illinois State Geological Survey.

Table 4-3. Step 3: Emergency Actions

Condition	Description of Condition	Action to be Taken
High Water Level/ Large Spillway Release	See Table 4-1 and Table 4-2 for elevations and triggering water levels associated with the impoundments and spillways covered by this EAP.	<ol style="list-style-type: none"> 1. Assess cause of increased reservoir stage, especially during fair weather conditions. 2. Determine Response Level. 3. Make proper notifications as outlined in the Figure 2-2 Notification Flowchart. 4. Perform additional tasks as determined through consultation with the ERT. 5. Make notifications if condition worsens such that downstream flooding is imminent. <p>Response Level 0: require enhanced surveillance 3 times per day</p> <p>Response Level 1: contact internal chain of command and external response partners as necessary; inspect impoundment minimum 1 time per hour</p> <p>Response Level 2: contact internal chain of command; notify ESDA/EMA's and notify external response partners. ESDA/EMA's notify affected parties.</p> <p>Response Level 3: contact internal chain of command; notify ESDA/EMA's and notify external response partners. ESDA/EMA's notify affected parties of emergency incident.</p>
Seepage	Localized new seepage or boil(s) observed along downstream face / toe of earthen embankment with muddy discharge and increasing but controllable discharge of water.	<ol style="list-style-type: none"> 1. Measure and record feature dimensions, approximate flow rate, and relative location to existing surface features. Take photos. Document location on a site plan and in inspection notes. 2. Determine Response Level. 3. Make proper notifications as outlined in the Figure 2-2 Notification Flowchart. 4. ERT (with Dam Safety Manager as lead) to determine mitigation actions. The following actions may apply: <ol style="list-style-type: none"> a) Place a ring of sand bags with a weir at the top towards the natural drainage path to monitor flow rate. If boil becomes too large to sand bag, place a blanket filter over the area using non-woven filter fabric and pea gravel. Attempt to contain flow in such a manner (without performing any excavations) that flow rates can be measured. Stockpile gravel and sand fill for later use, if necessary. b) Inspect the embankment and collect piezometer, water level and seepage flow data daily unless otherwise instructed by the Dam

Table 4-3. Step 3: Emergency Actions

Condition	Description of Condition	Action to be Taken
		<p>Safety Manager. Record any changes of conditions. Carefully observe embankment for signs of depressions, seepage, sinkholes, cracking or movement.</p> <p>c) Maintain continuous monitoring of feature. Record measured flow rate and any changes of condition, including presence or absence of muddy discharge.</p> <p>5. Make notifications as outlined in the lower portion of the Notification Flowchart (Figure 2-2) if condition worsens such that failure is imminent.</p>
Sabotage and Miscellaneous Other Issues	Criminal action with significant damage to embankment or structures where significant repairs are required and the integrity of the facility is compromised—condition appears stable with time.	<ol style="list-style-type: none"> 1. Contact law enforcement authorities and restrict all access (except emergency responders) to impoundment. Restrict traffic on embankment crest to essential emergency operations only. 2. Determine Response Level. 3. Make internal notifications as outlined in the upper portion of the Notification Flowchart (Figure 2-2). 4. In conjunction with the Dam Safety Manager, assess extent of damage and visually inspect entire embankment and ancillary structures for additional less obvious damage. Based on inspection results, confirm if extent of damage to various components of the impoundment warrants a revised Response Level and additional notifications. 5. Perform additional tasks as directed by the ERT. 6. Make notifications if conditions worsen.
Embankment Deformation	<p>Cracks: New longitudinal (along the embankment) or transverse (across the embankment) cracks more than 6 inches deep or more than 3 inches wide or increasing with time. New concave cracks on or near the embankment crest associated with slope movement.</p>	<ol style="list-style-type: none"> 1. Measure and record feature dimensions, approximate flow rate, and relative location to existing surface features. Take photos. Document location on a site plan and in inspection notes. 2. Restrict traffic on embankment crest to essential emergency operations only. 3. Determine Response Level. 4. Make notifications as outlined in the Figure 2-2 Notification Flowchart. 5. ERT (with Dam Safety Manager as lead) to determine mitigation actions. The following actions may apply: <ol style="list-style-type: none"> a) Place buttress fill against base of slope immediately below surface feature. Stock pile additional fill. b) Place sand bags as necessary around crack area to divert any storm water runoff from flowing into crack(s). 6. As directed by the Dam Safety Manager, additional inspection and monitoring of the dam may be required. Items may include; inspect the dam on a schedule determined by the Dam Safety Manager; collect piezometer and water level data; and record any changes of condition. Carefully observe dam for signs of depressions, seepage, sinkholes, cracking or movement. 7. Make notifications as outlined in the Figure 2-2 Notification Flowchart if conditions worsen such that failure is imminent.
	<p>Slides / Erosion: Deep slide / erosion (greater than 2 feet deep) on the embankment that may also extend beyond the embankment toe but does not encroach onto</p>	<ol style="list-style-type: none"> 1. Measure and record feature dimensions, approximate flow rate, and relative location to existing surface features. Take photos. Document location on a site plan and in inspection report. 2. Restrict traffic on embankment crest to essential emergency operations only. 3. Determine the Response Level. 4. Make notifications as outlined in the Figure 2-2 Notification Flowchart.

Table 4-3. Step 3: Emergency Actions

Condition	Description of Condition	Action to be Taken
	<p>the embankment crest and appears stable with time.</p>	<ol style="list-style-type: none"> 5. ERT (with Dam Safety Manager as lead) to determine mitigation actions. Additional actions may include the following items. <ol style="list-style-type: none"> a) Place sand bags as necessary around slide area to divert any storm water runoff from flowing into slide(s). b) Increase inspections of the dam; collect piezometer and water level data; and record any changes of condition. During inspections, carefully observe dam for signs of depressions, seepage, sinkholes, cracking or movement. 6. Make notifications as outlined in the Figure 2-2 Notification Flowchart if conditions worsen such that failure is imminent.
	<p>Sinkholes: Small depression observed on the embankment or within 50 feet of the embankment toe that is less than 5 feet deep and 30 feet wide or which is increasing with time.</p>	<ol style="list-style-type: none"> 1. Slowly open drain gates to lower pool elevation. 2. Measure and record feature dimensions, approximate flow rate, and relative location to existing surface features. Take photos. Document location on a site plan and in inspection notes. 3. Restrict traffic on embankment crest to essential emergency operations only. 4. Determine Response Level. 5. Make notifications as outlined in the Figure 2-2 Notification Flowchart. 6. ERT (with Dam Safety Manager as lead) to determine mitigation actions. Additional actions may include the following items: <ol style="list-style-type: none"> a) Backfill the depression with relatively clean earth fill (free of organic materials) generally even with surrounding grade and slightly mounded (6 to 12 inches higher) in the center in order to shed storm water away from the depression. Stock pile additional fill. b) Increase inspections of the dam; collect piezometer and water level data daily unless otherwise instructed by Dam Safety Manager; and record any changes of condition. Carefully observe dam for signs of depressions, seepage, sinkholes, cracking or movement. 7. Make notifications as outlined in the Figure 2-2 Notification Flowchart if conditions worsen such that failure is imminent.
<p>Gate Malfunction or Failure</p>	<p>Sluice gate damaged structurally (sabotage, debris, etc.) with uncontrolled release of water at a constant volume. Condition appears stable.</p>	<ol style="list-style-type: none"> 1. Close any other gates, if open. 2. Determine Response Level. 3. Make notifications as outlined in the Figure 2-2 Notification Flowchart. 4. Obtain instructions from the Dam Safety Manager to determine if there are other methods to stop or slow down the flow of water. 5. If conditions worsen such that failure is imminent, make notifications as outlined in the lower portion of the Figure 2-2 Notification Flowchart.

5 PREPAREDNESS

The intent of this section is to provide information that will be utilized during a response. Established emergency supplies and locations, suppliers, and equipment are provided in Table 5-1. Supplier contact information is listed in Table 5-2.

A coordination meeting shall be conducted annually between representatives of the Illinois Power Resources Generating, LLC and local emergency responders. This meeting may be in the form of a face-to-face meeting, tabletop exercise, or additional training regarding the EAP.

Table 5-1. Emergency Supplies and Equipment

Item	On-site (Yes/No/Occasionally)	Remarks
Flashlights	Yes	Typically at Duck Creek Power Station Maintenance Facility; contact Shift Supervisor for location(s).
Generator		
Extension Cords		
Fire extinguishers		
Floodlights		
Backhoe	Yes	John Deere 301 Backhoe/Loader and Caterpillar 426C Backhoe/Loader; contact Shift Supervisor for location(s).
Dozer	Yes	Caterpillar D9R Dozer and Caterpillar D10R Dozer; contact Shift Supervisor for location(s).
Large Equipment (Rental – including excavating equipment, pumps, lighting)	Yes	Two Caterpillar 834 Rubber Tired Bucket Loader, Fiatt Road Grader, two farm tractors with end loaders, and a Caterpillar Skid Steer with end loaders are also available; contact Shift Supervisor for location(s). Contact Altorfer, Inc., Bolon’s Repair, MH Equipment, or Sunbelt Rentals for additional large equipment (see Table 5-2).
Dump Truck	No	Contact Captain Hook Roll-Off Boxes or Done Rite Construction Co. Inc. for additional dump trucks (see Table 5-2).
Pump and Hoses	No	Contact Bolon’s Repair or Pratt Lumber Do It Center for additional pumps and hoses (see Table 5-2).
Sandbags and Sand	No	Contact Duck Creek Sand and Gravel, Davis Sand and Gravel, or Pratt Lumber Do It Center for additional sandbags and sand (see Table 5-2).
Fill (Stone, aggregate, sand)	No	Contact Duck Creek Sand and Gravel, Davis Sand and Gravel, or Pratt Lumber Do It Center for additional fill (see Table 5-2).
Concrete/grout	No	Contact Canton Redi-Mix for additional batch plant concrete or Pratt Lumber Do It Center for additional bagged concrete (see Table 5-2).
Geotextile Filter Fabric	Yes	Two rolls of 10 ounce, non-woven filter fabric are available on site; contact Shift Supervisor for location(s).
Plastic Sheeting	No	Contact Pratt Lumber Do It Center for additional plastic sheeting (see Table 5-2).
Rope	No	Contact Alexander Lumber, Bolon’s Repair, and Pratt Lumber Do It Center for additional rope (see Table 5-2).
Personal Flotation Devices	Yes	Typically at Duck Creek Power Station Maintenance Facility; contact Shift Supervisor for location(s).

Table 5-2. Supplier Addresses

Supply/Rental Item(s)	Supplier Contact Information	Distance from Site (miles)	Address
Rope	<u>Alexander Lumber Co.</u> (309) 647-0396	8.4	406 South 5 th Ave Canton, IL 61520
Large Equipment	<u>Altorfer, Inc.</u> (309) 697-1234	33.5	6315 West Fauber Road Bartonville, IL 61607
Large Equipment, Pump and Hoses, Rope	<u>Bolon's Repair</u> (309) 647-2203	10.5	999 West Locust Canton, IL 61520
Concrete/grout	<u>Canton Redi-Mix</u> (309) 668-2261	13.1	22381 IL-78 Canton, IL 61520
Dump Truck	<u>Captain Hook Roll-Off Boxes</u> (309) 565-7676	18.2	309 South Glasford Road Glasford, IL 61533
Sandbags and Sand	<u>Davis Sand and Gravel</u> (309) 647-0019	10.7	1130 West Locust Street Canton, IL 61520
Dump Truck	<u>Done Rite Construction Co Inc.</u> (309) 331-4983	55.6	10277 IL RT 101 Littleton, IL 61452
Fill (Stone, aggregate, sand)	<u>Duck Creek Sand and Gravel</u> (309) 668-2278	5.5	17505 North Duck Island Road Canton, IL 61520
Large Equipment	<u>MH Equipment</u> (309) 699-4024	38.4	111 Carver Lane East Peoria, IL 61611
Concrete/grout, Pump and Hoses, Sandbags and Sand, Fill (Stone, aggregate, sand), Plastic Sheeting, Rope	<u>Pratt Lumber Do It Center</u> (309) 547-3587	13.4	311 East Avenue E Lewistown, IL 61542
Large Equipment	<u>Sunbelt Rentals</u> (309) 694-6201	39.7	1601 North Main Street East Peoria, IL 61611

6 FACILITY/IMPOUNDMENT DESCRIPTION

The impoundments included in this EAP are described as follows and illustrated in Figure 1-2. Table 6-1 contains additional geometric details for each impoundment.

The Duck Creek Power Station is located in Canton, Illinois, roughly 50 miles west of Bloomington, Illinois east of IL-78 and west of US-24.

Ash Pond No. 1 is a diked impoundment that was commissioned in 1976. The main inflow into Ash Pond No. 1 is precipitation, which is accumulated and transported through channels around the inside perimeter of the pond, reaching two small internal impoundments. It has a maximum embankment height of 28 feet, a crest elevation of 625 feet above Mean Sea Level (MSL), and a crest width of 20 feet. The total length of the embankment is approximately 6,500 feet. The storage capacity of the pond is approximately 1,300 acre-feet at normal pool elevation. Approximately three-fourths of Ash Pond No. 1 is stacked ash, located on the southern side. Free water volume accounts for approximately one-fourth of the pond and is located on the northern end.

Ash Pond No. 2 is a diked impoundment that was commissioned in 1986. The main inflows into Ash Pond No. 2 are precipitation and stormwater pumped from Ash Pond No. 1. The diked fly ash is constructed in a serpentine channel to direct process water and allow for additional time to filter suspended solids before entering the main pond. The outlet structure is in the northeast corner of the pond and transports water into the Recycle Pond, along with a seepage blanket and pump. It has a maximum embankment height of 30 feet, a crest elevation of 640 feet above MSL, and a crest width of 20 feet. The total length of the embankment is approximately 9,000 feet. The storage capacity of the pond is approximately 1,000 acre-feet at normal pool elevation.

The GMF Pond is located directly north of the GMF Recycle Pond, east of North Bethel Cemetery Road. The pond encompasses approximately 30 acres and is graded to the south, where water discharges into a channel to flow into the GMF Recycle Pond. From the GMF Recycle Pond, water exits through piping into the Duck Creek Cooling Pond.

Table 6-1. Station Impoundment Characteristics

Feature/Parameter	Ash Pond No. 1	Ash Pond No. 2	GMF Pond
Maximum Embankment Height	28 feet*	30 feet*	11 feet
Length of Dam	6,500 feet*	9,000 feet*	4,560 feet
Crest Width	20 feet*	20 feet*	30 feet
Crest Elevation	±625 feet	±640 feet*	±620 feet
Reservoir Area at Top of Dam	59 acres*	83 acres*	31.6 acres
Storage Capacity at Top of Dam	1,320 acre-feet*	1,020 acre-feet*	Unknown
Primary Spillway Type	None	None	Lined open channel
Primary Spillway Crest Elevation	None	None	615 feet
Storage Capacity at Primary Spillway Elevation	None	None	None
Reservoir Area at Normal Water Surface Elevation	40 acres	11 acres	31 acres
Auxiliary Spillway Type	None	None	None
Auxiliary Spillway Crest Elevation	None	None	None

Notes:

*Source: "COAL ASH IMPOUNDMENT SITE ASSESSMENT FINAL REPORT", May 10, 2011. Elevations are in reference to original construction drawings by Commonwealth Associates, Inc.

All remaining values are GIS estimated.

7 BREACH INUNDATION MAPS AND POTENTIAL IMPACTS

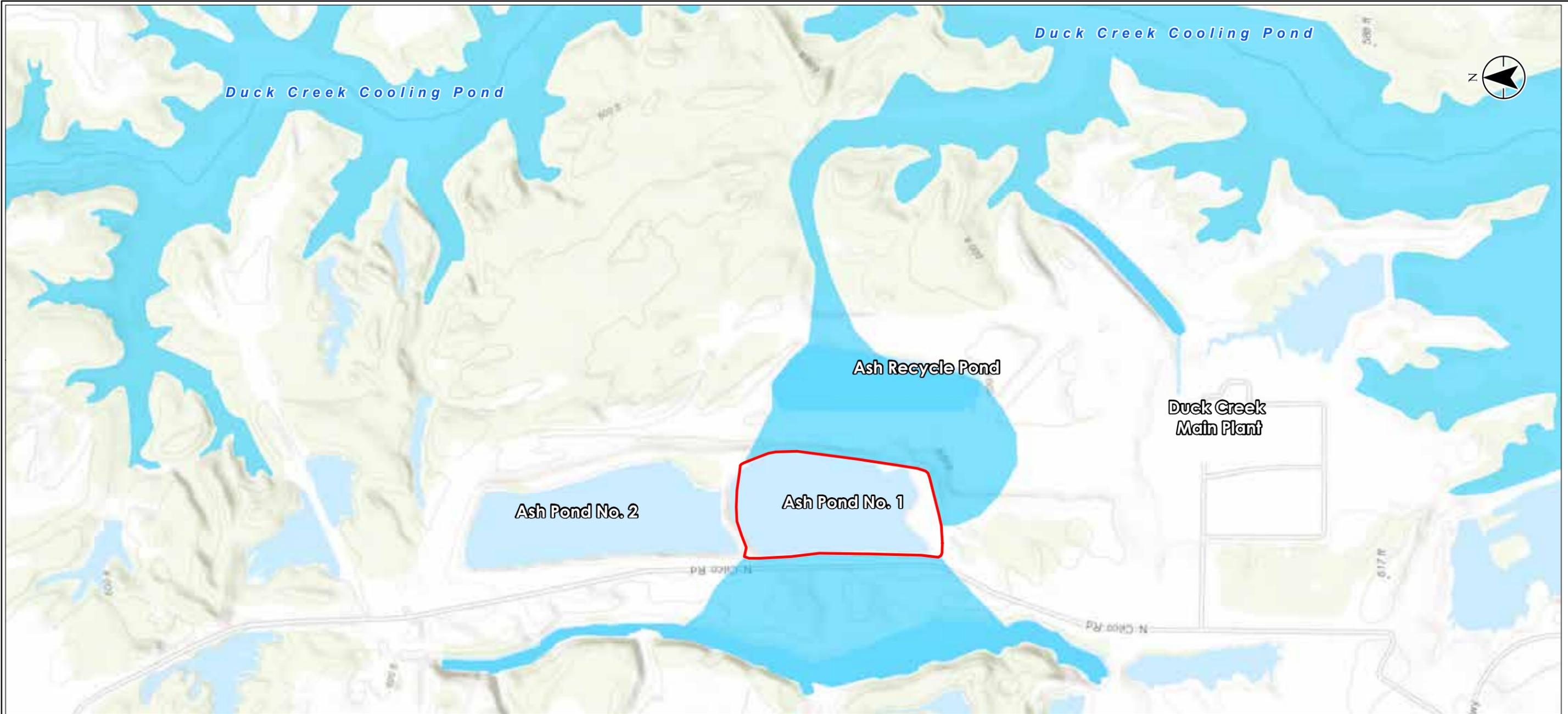
Inundation maps for Ash Pond No. 1, Ash Pond No. 2, and the GMF Pond potential breach scenarios are provided in this section. It is the Fulton County ESDA/EMA's responsibility to keep a current list of affected parties/properties to contact in the case of emergencies that result in Response Level 2 or 3. This list should encompass all properties within and adjacent to the probable inundation extents shown in the provided maps.

The methodology used to identify probable inundation extents for potential breach scenarios varied as a function of the impoundment size, location, surrounding topography, and surrounding structures/facilities/waterbodies.

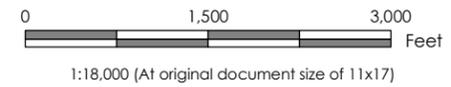
Ash Pond No. 1, Ash Pond No. 2, and the GMF Pond inundation maps were developed from visual assessments. Topographic data and basemap imagery were used to identify the mapped inundation areas.

Three failure scenarios were identified at Ash Pond No. 1 and Ash Pond No. 2. At both impoundments, the breach would be contained in either the Duck Creek Cooling Pond or the unnamed body of water west of N. Cilco Road. Four failure scenarios were identified at the GMF Pond. Only Duck Creek Power Station owned structures were identified in the potential breach paths, with a breach contained in the Duck Creek Cooling Pond. The land between the impoundments and the Duck Creek Cooling Pond and unnamed body of water west of N. Cilco Road would also be inundated during a breach.

Approximate inundation areas are illustrated on Figure 7-1, Figure 7-2, and Figure 7-3.



- Legend**
- Disposal Area Approximate Limits
 - Approximate Anticipated Inundation Extents



Project Location: 175605019
 Latitude: 40.466181 Prepared by CAJ on 2017-03-06
 Longitude: -89.984236 Technical Review by MAT on 2017-03-10
 Fulton County, Illinois

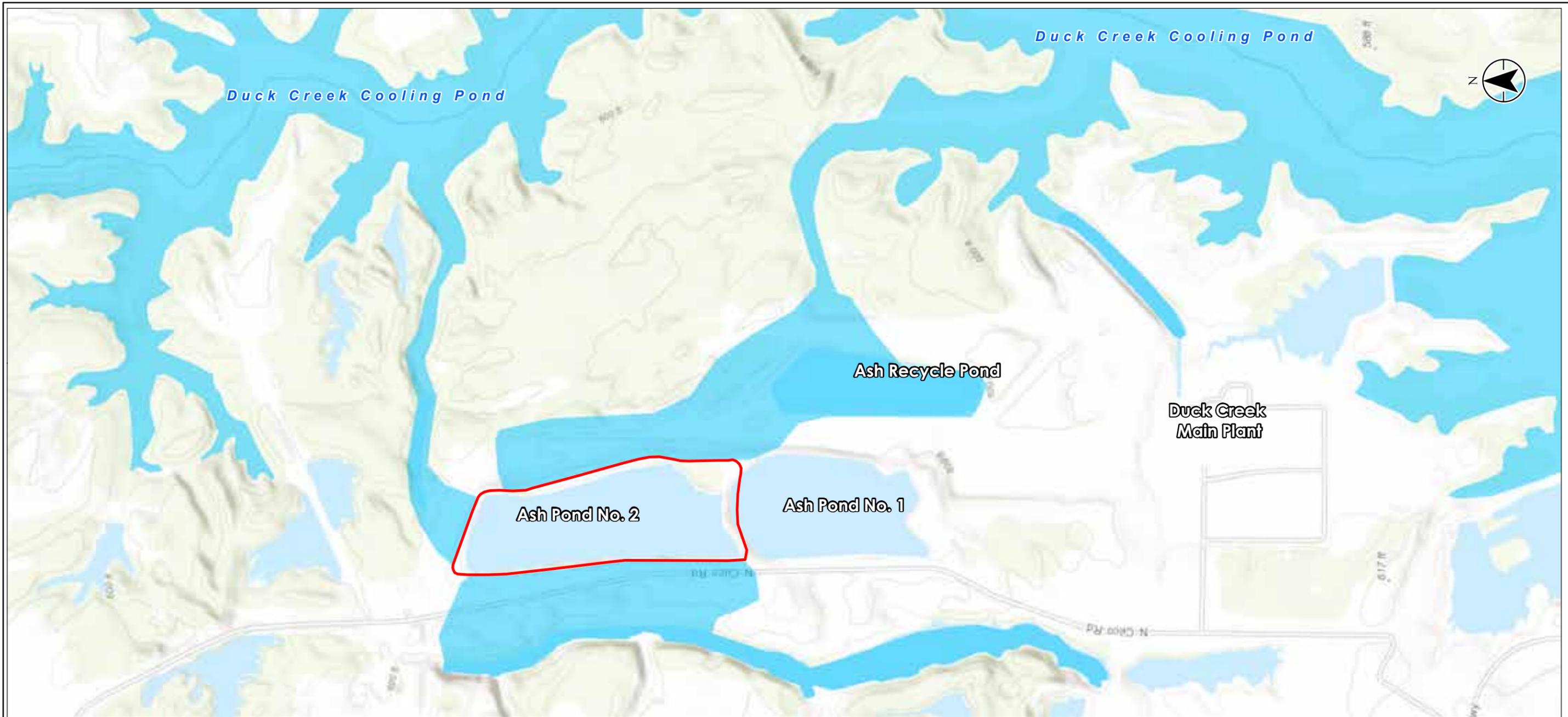
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 Duck Creek Power Station
 Emergency Action Plan

Figure No.
7-1

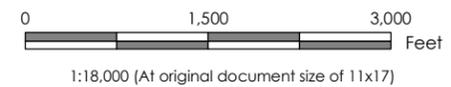
Title
**Inundation Map
 Ash Pond No. 1**

Notes
 1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
 2. Aerial Source: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO,
 3. USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri
 China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User

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- Legend**
- Disposal Area Approximate Limits
 - Approximate Anticipated Inundation Extents



Project Location: 175605019
 Latitude: 40.466181 Prepared by CAJ on 2017-03-06
 Longitude: -89.984236 Technical Review by MAT on 2017-03-10
 Fulton County, Illinois

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 Duck Creek Power Station
 Emergency Action Plan

Figure No.

7-2

Title

**Inundation Map
 Ash Pond No. 2**

- Notes**
1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
 2. Aerial Source: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO,
 3. USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User

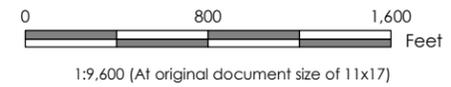
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 Revised: 2017-04-12 By: catphmon



- Legend**
- Disposal Area Approximate Limits
 - Approximate Anticipated Inundation Extents



Project Location: 175605019
 Latitude: 40.466181 Prepared by CAJ on 2017-03-06
 Longitude: -89.984236 Technical Review by MAT on 2017-03-10
 Fulton County, Illinois Independent Review by MC on 2017-03-14

Client/Project
 Duck Creek Power Station
 Emergency Action Plan

Figure No.
7-3

Title
**Inundation Map
 GMF Pond**

- Notes**
1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
 2. Aerial Source: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO,
 3. USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User

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