

Kincaid Generation, LLC

KINCAID POWER PLANT
KINCAID, CHRISTIAN COUNTY, ILLINOIS

Emergency Action Plan (EAP)

40 C.F.R. § 257.73(a)(3), Ill. Adm. Code 845.520
Coal Combustion Residual (CCR) Impoundment
& Related Facilities

- Ash Pond (NID # IL50706) (IEPA # W0218140002-01)

Revision Date: September 16, 2021

Qualified Professional Engineer Certification; Emergency Action Plan for the Kincaid Power Plant Ash Pond

In accordance with 40 C.F.R. § 257.73(a)(3)(iv) and 35 Ill. Adm. Code 845.520(e), the owner or operator of a CCR unit that is required to prepare a written Emergency Action Plan under 40 C.F.R. § 257.73(a)(3) and 35 Ill. Adm. Code 845.520(a) must obtain a certification from a qualified professional engineer stating that the written Emergency Action Plan meets the requirements of 40 C.F.R. § 257.73(a)(3) and 35 Ill. Adm. Code 845.520.

I, Phil Morris, 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:

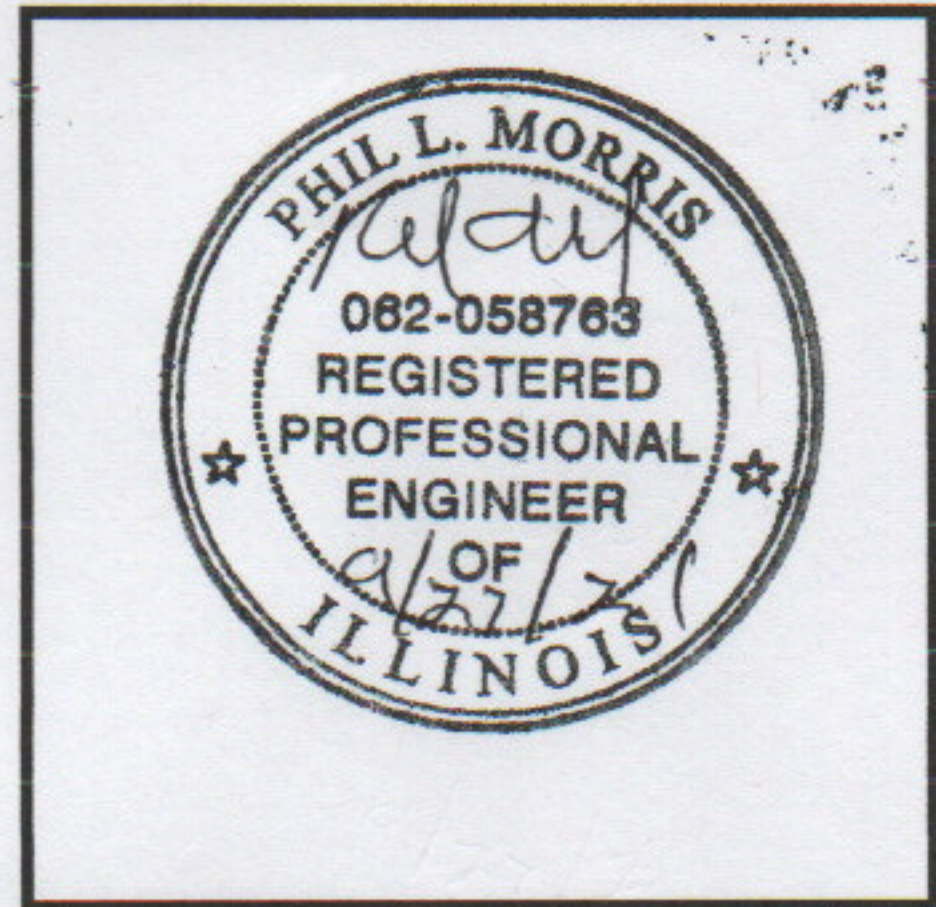
1. the information contained in this Emergency Action Plan was prepared in accordance with the accepted practice of engineering; and
2. this Emergency Action Plan meets the requirements of 40 C.F.R. § 257.73(a)(3) and 35 Ill. Adm. Code 845.520.

Phil Morris

Phil Morris
Senior Director, Corporate Environmental

9/27/21

Date



**KINCAID POWER PLANT
EMERGENCY ACTION PLAN
CCR IMPOUNDMENT & RELATED FACILITIES**

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**KINCAID POWER PLANT
EMERGENCY ACTION PLAN
CCR IMPOUNDMENT & RELATED FACILITIES**

1 STATEMENT OF PURPOSE

The Kincaid Power Plant (Power Plant) is located near the City of Kincaid in Christian County, Illinois. The location is shown in Figure 1-1. The Power Plant is a coal-fired electricity producing power plant owned and operated by Kincaid Generation, 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 impoundment located at the site:

- Ash Pond (NID # IL50706) (IEPA # W0218140002-01)

The location of this impoundment is shown in Figure 1-2. Section 6 of this EAP includes a description of the 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 the CCR impoundment and related facilities at the Kincaid Power Plant.
2. Define the events or circumstances involving the CCR impoundment and related facilities at the Kincaid Power Plant 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 impoundment.
6. Identify the downstream area that would be affected by failure of the impoundment.
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 Kincaid Generation, LLC was utilized and relied upon in preparation of this report.

Figure 1-1. Kincaid Power Plant Location Map

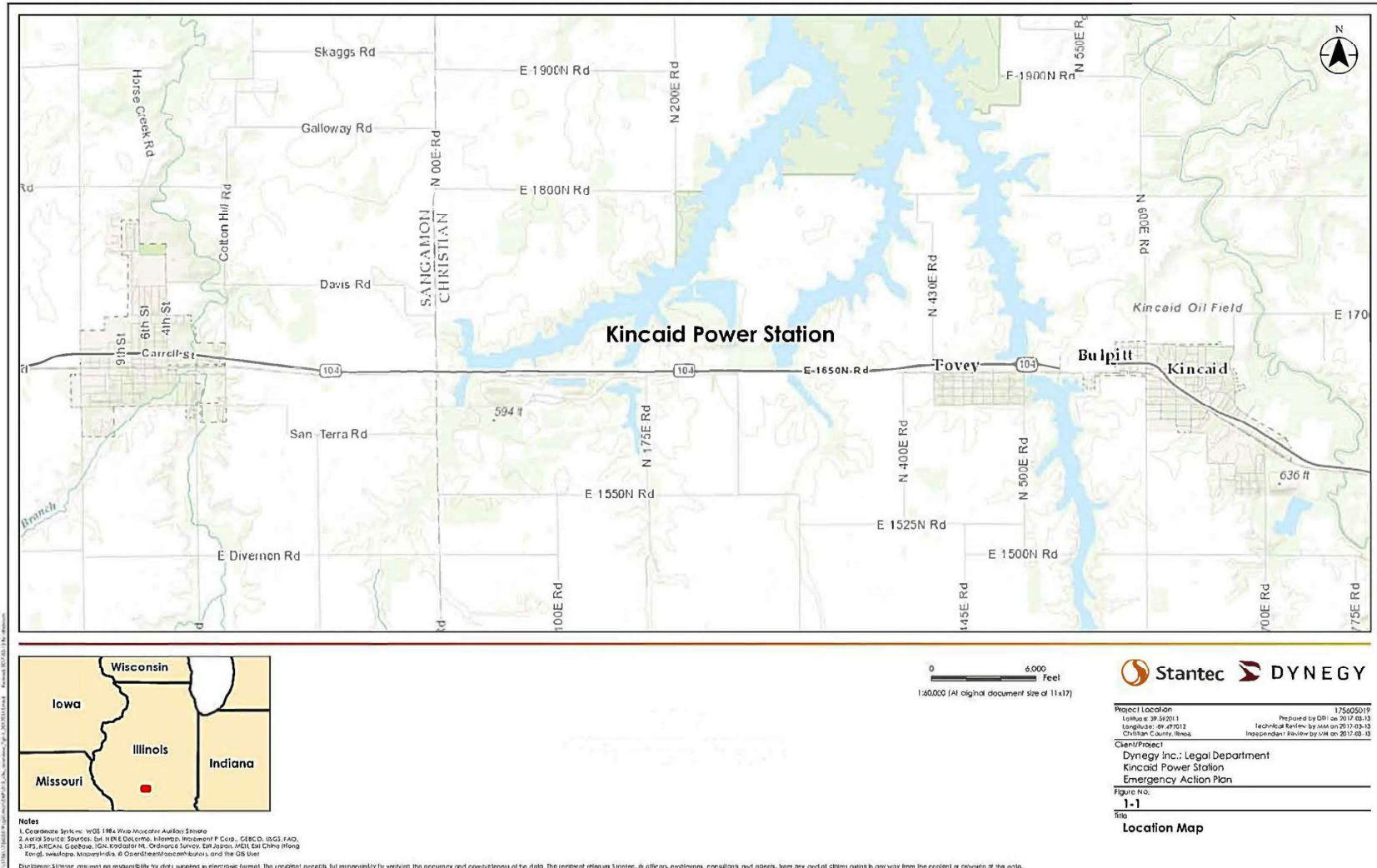


Figure 1-2. Kincaid Power Plant CCR Impoundment & Related Facilities



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

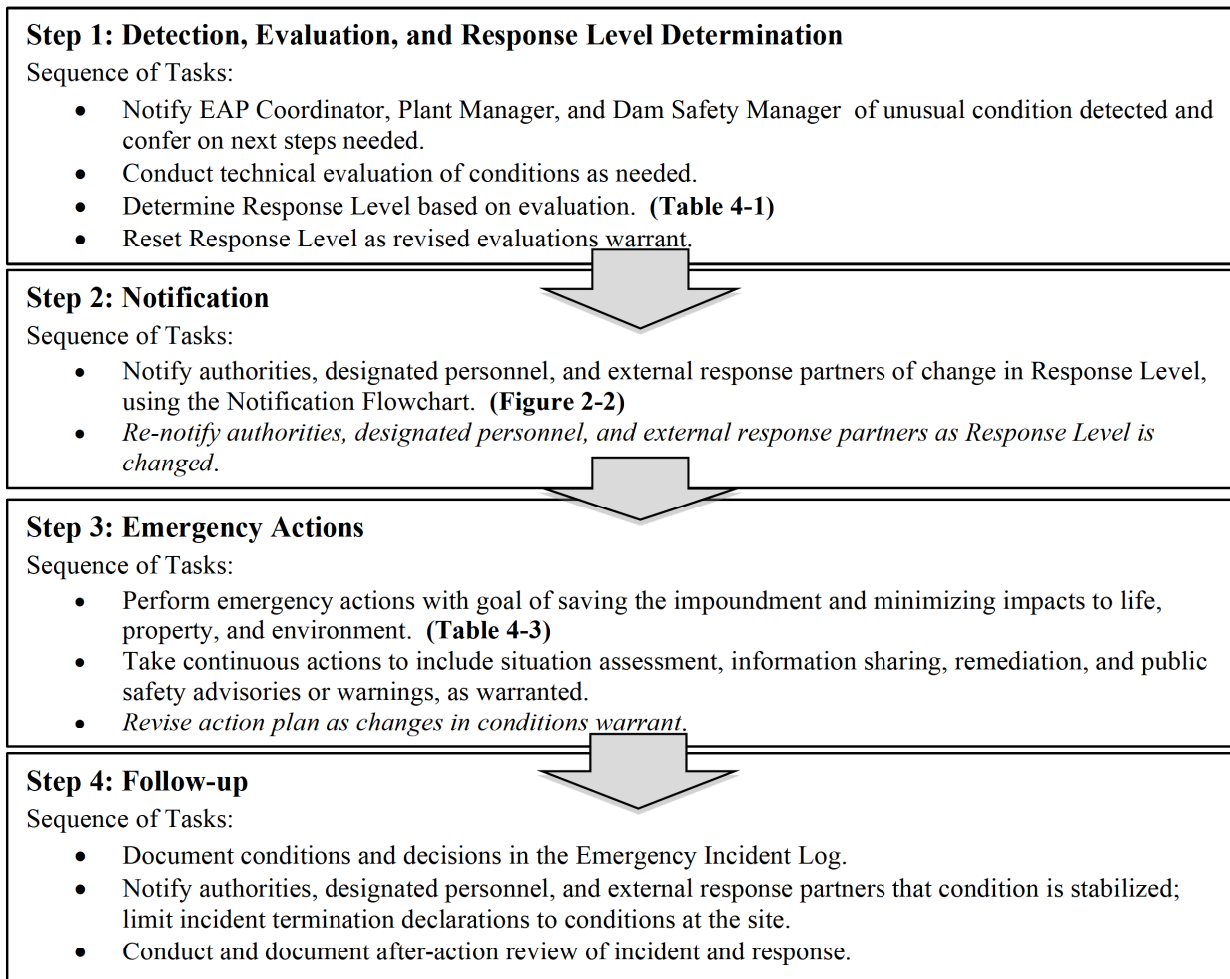


Figure 2-2. Notification Flowchart

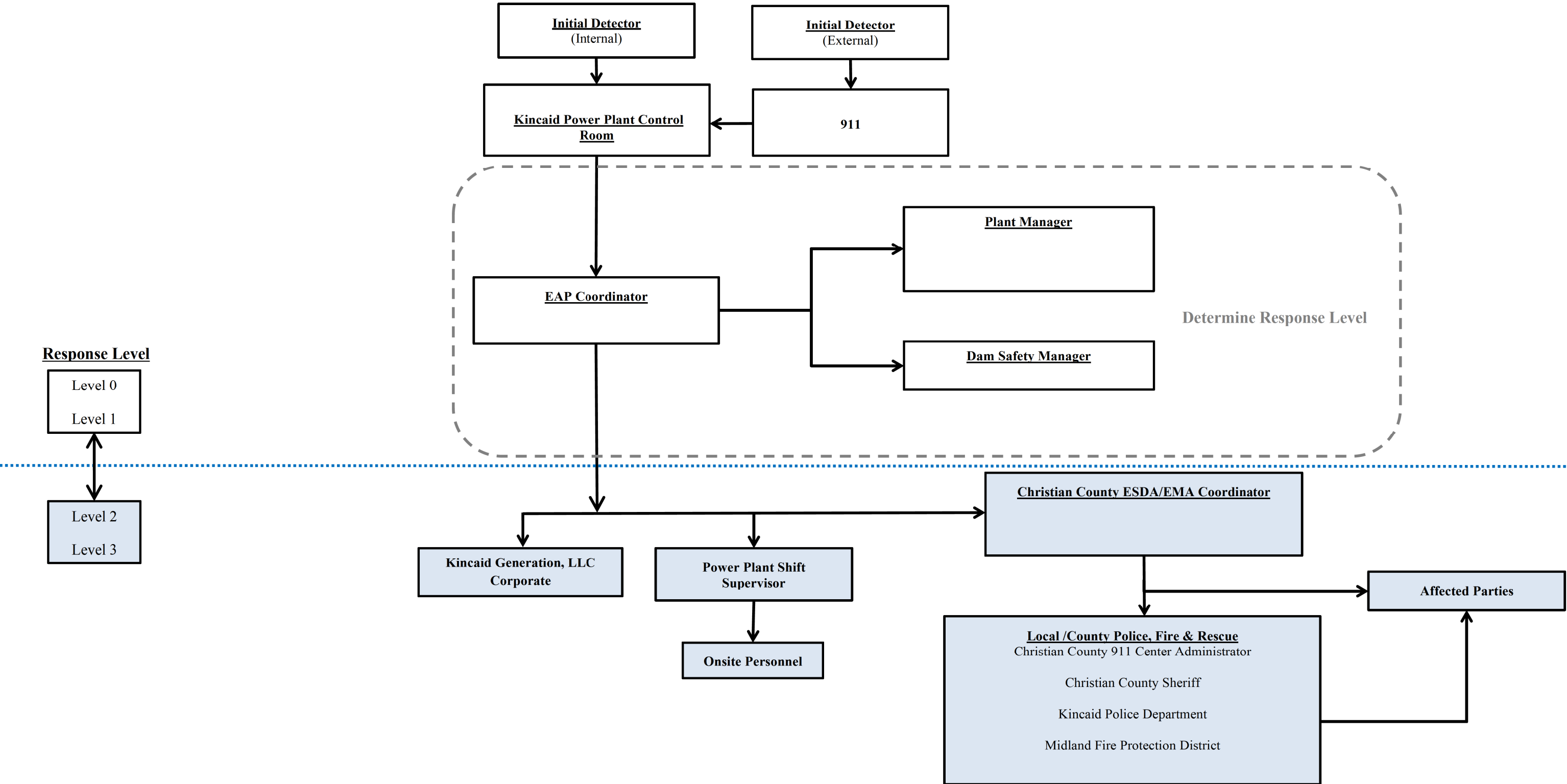


Figure 2-3. EAP Response Process Decision Tree

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.

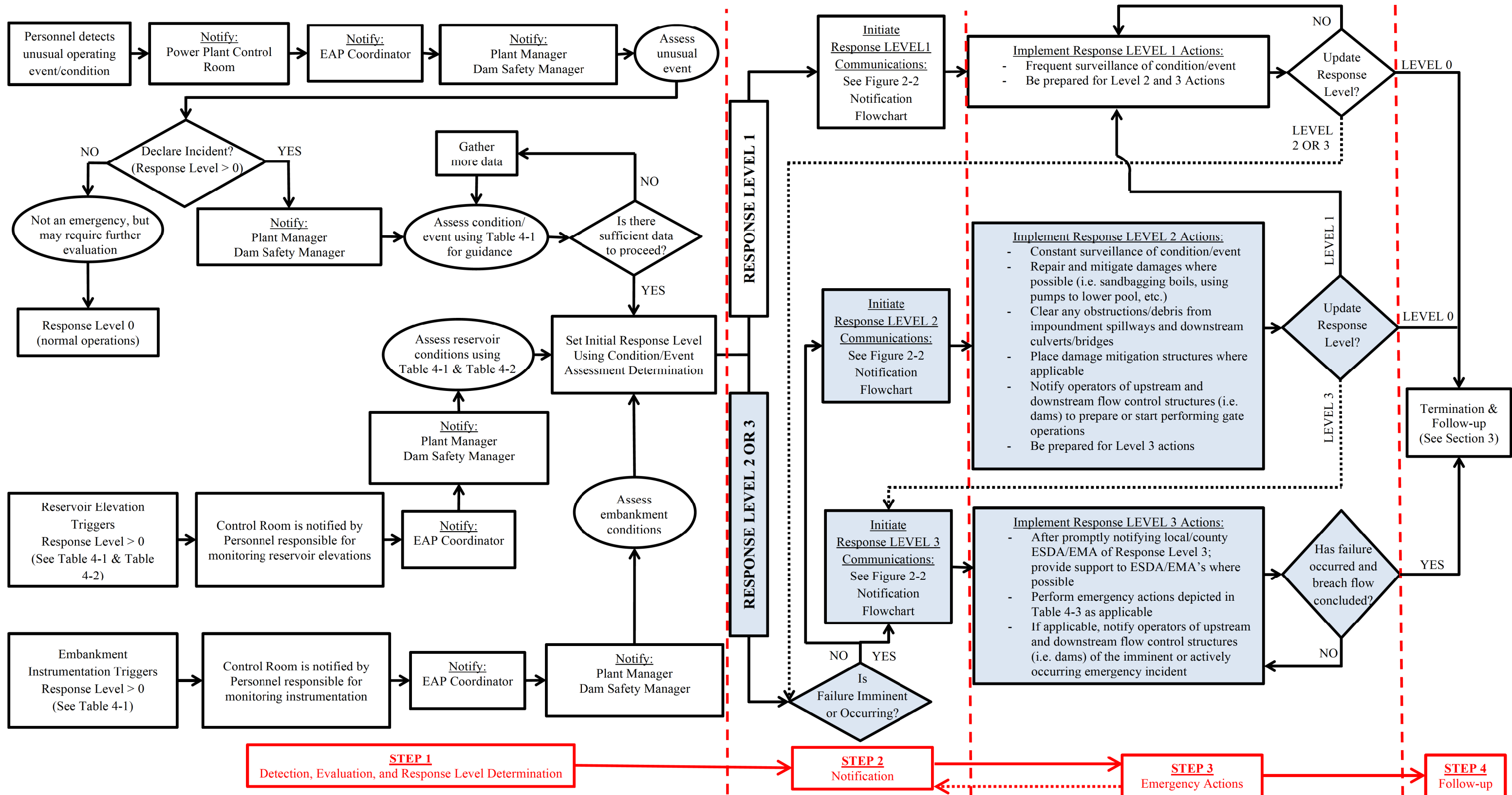


Table 2-1. EAP Emergency Responders

Position / Entity		Contact Information	
Internal Contacts			
Kincaid Power Plant		Phone #	
Plant Manager			
EAP Coordinator		(618) 225-9043	
Control Room		(217) 237-0209	
Corporate Operations			
Dam Safety Manager		(618) 792-8488	
External Contacts			
Local/County ESDA/EMA, Police, & Fire		Phone #	Alternate Phone #
Christian County 911 Emergency Communication Center		911	(217) 287-7911
Christian County ESDA/EMA		(217) 287-7227	
Christian County Sheriff Department		(217) 824-4961	
Kincaid Police Department		(217) 237-5568	
Midland Fire Department		(217) 237-4449	
State Emergency Management Agencies & Organizations		Phone #	Alternate Phone #
IDNR-OWR Dam Safety Section Manager		(217) 782-4427	
Sangchris Lake State Park - Park Information		(217) 498-9208	
Illinois Conservation Police - Office of Law Enforcement		(217) 782-6302	
Illinois State Police - District Commander		(217) 786-7107	

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
Emergency Response Team (ERT)	<p>ERT: personnel responsible for EAP implementation, distribution, updates/maintenance, and training activities. The <i>ERT</i> is comprised of the following roles;</p> <ol style="list-style-type: none"> 1. Corporate: corporate entity, committee, team, or position with relevant responsibility for a given generating power plant. 2. Power Plant Management: Personnel responsible for day-to-day operation and management of the Power Plant. 3. Dam Safety Manager: Personnel that is most knowledgeable about the design and technical operation of facilities at a given power plant. 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 Power Plant. 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 Power Plant. 5. Declare termination of emergencies at the Power Plant.
Christian County ESDA/EMA	<ol style="list-style-type: none"> 1. Receive Response Level reports from <i>Corporate</i> through <i>EAP Coordinator</i>. 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 <i>Corporate</i> and/or <i>EAP Coordinator</i>, 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 <i>Corporate</i>. 7. If necessary, coordinate with <i>State ESDA/EMA</i>.
Kincaid Police, Fire, and Rescue	<ol style="list-style-type: none"> 1. Receive alert status reports from the <i>ERT</i> or the <i>County ESDA/EMA</i>. 2. If necessary, notify affected parties and general public within inundation areas (see Section 7). 3. Render assistance to Christian County ESDA/EMA, as necessary. 4. Render assistance to <i>Corporate</i> and <i>Power Plant Management</i>, as necessary.
Christian County Police, Fire and Rescue, and Emergency Services	<ol style="list-style-type: none"> 1. Receive alert status reports from the <i>ERT</i> or the <i>County ESDA/EMA</i>. 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 emergency auxiliary 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 normal pool fluctuation elevation.	Level 1
	Impoundment water surface elevation above high normal pool fluctuation 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

Table 4-1. Guidance for Determining the Response Level

Event	Situation	Response Level
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
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	605 ft.	Not Applicable	601.8-603.3 ft.	604 ft.

Notes:

Source: “Dam Safety Assessment of CCW Impoundments – Kincaid Generation Slag Field”, March 24, 2011.

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 impoundment 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. Response Level 0: require enhanced surveillance 3 times per day Response Level 1: contact internal chain of command and external response partners as necessary; inspect impoundment minimum 1 time per hour Response Level 2: contact internal chain of command; notify ESDA/EMA's and notify external response partners. ESDA/EMA's notify affected parties. 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.
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 Safety Manager. Record any changes of conditions. Carefully observe embankment for signs of depressions, seepage, sinkholes, cracking or movement. c) Maintain continuous monitoring of feature. Record measured flow rate and any changes of condition, including presence or absence of muddy discharge. 5. Make notifications as outlined in the lower portion of the Notification Flowchart (Figure 2-2) if condition worsens such that failure is imminent.

Table 4-3. Step 3: Emergency Actions

Condition	Description of Condition	Action to be Taken
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 engineers; 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.

Table 4-3. Step 3: Emergency Actions

Condition	Description of Condition	Action to be Taken
Embankment Deformation (cont.)	<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 the embankment crest and appears stable with time.</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. 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.
Gate Malfunction or Failure	<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. Suppliers contact information is listed in Table 5-2.

A coordination meeting shall be conducted annually between representatives of Kincaid Generation, 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 Kincaid Power Plant Maintenance Facility. Contact Shift Supervisor for location(s).
Generator		
Extension Cords		
Fire extinguishers		
Floodlights		
Backhoe	Yes	Contact Shift Supervisor for availability and location(s). Contact Roland Machinery, Sunbelt Rentals, Urban Rental Co. (see Table 5-2) and/or other nearby large equipment rental providers for additional large equipment as necessary.
Dozer	Yes	Contact Shift Supervisor for location(s). Contact Roland Machinery, Sunbelt Rentals, Urban Rental Co. (see Table 5-2) and/or other nearby large equipment rental providers for additional large equipment as necessary.
Large Equipment (Rental – including excavating equipment, pumps, lighting)	Yes	Contact Shift Supervisor for availability and location(s). Contact Roland Machinery, Sunbelt Rentals, Urban Rental Co. (see Table 5-2) and/or other nearby large equipment rental providers for additional large equipment as necessary.
Dump Truck	Yes	Contact Shift Supervisor for availability and location(s). Contact Roland Machinery, Sunbelt Rentals, Urban Rental Co. (see Table 5-2) and/or other nearby large equipment rental providers for additional large equipment as necessary.
Pump and Hoses	Yes	Contact Shift Supervisor for availability and location(s). Contact Sunbelt Rentals, Urban Rental Co. (see Table 5-2) for high capacity portable pumps as necessary.
Sandbags and Sand	Yes	Contact Shift Supervisor for availability and location(s). Contact Burkhardt Sand & Gravel or Pawnee Lumber & Hardware (see Table 5-2) for additional sandbags as necessary.
Fill (Stone, aggregate, sand)	Yes	Contact Shift Supervisor for location(s). Contact listed suppliers in Table 5-2 for gravel, sand, and riprap fill as necessary.
Concrete/grout	No	Contact Shift Supervisor for availability and location(s). Contact Pawnee Lumber & Hardware or United Rentals (see Table 5-2) for concrete as necessary.
Geotextile Filter Fabric	No	
Plastic Sheeting	No	
Rope	No	
Personal Flotation Devices	Yes	Contact Shift Supervisor for location(s).

Table 5-2. Supplier Addresses

Supply/Rental Item(s)	Supplier Contact Information	Distance from Site (miles)	Address
Backhoe, Dozer Large, Dump Truck and Equipment (Rental – including excavating equipment, pumps, lighting)	<u>Roland Machinery Co.</u> (217) 789-7711	19.5	816 N Dirksen Parkway Springfield, IL 62702
	<u>Sunbelt Rentals</u> (217) 528-1065	18.8	3040 E Ash Street Springfield, IL 62703
	<u>Urban Rental Company</u> (217) 824-4023	12.4	615 E Main Cross Street Taylorville, IL 62568
Pump and Hoses	<u>Sunbelt Rentals</u> (217) 528-1065	18.8	3040 E Ash Street Springfield, IL 62703
	<u>Urban Rental Company</u> (217) 824-4023	12.4	615 E Main Cross Street Taylorville, IL 62568
Sandbags and Sand and Fill (Stone, aggregate, sand)	<u>Burkhart Sand & Gravel</u> (217) 498-7248	12.6	10499 Buckhart Road Rochester, IL 62563
	<u>Pawnee Lumber & Hardware Co.</u> (217) 625-2771	4.6	512 6th Street Pawnee, IL 62558
Concrete/grout	<u>Pawnee Lumber & Hardware Co.</u> (217) 625-2771	4.6	512 6th Street Pawnee, IL 62558
	<u>United Rentals</u> (217) 241-3440	18.2	1600 S Dirksen Parkway Springfield, IL 62703

6 FACILITY/IMPOUNDMENT DESCRIPTION

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

Kincaid Power Plant is located near Highway 104 and the unincorporated community of Sicily in Christian County, south of the Sangchris Lake State Park and approximately 4 miles west of Kincaid, Illinois. The Ash Pond is a diked impoundment located northeast of the Kincaid Power Plant. The Ash Pond is bounded to the northwest and southeast by Sangchris Lake and to the northeast by farm land. The Ash Pond was constructed in the late 1960s when the Kincaid Power Plant was constructed using native glacial till, primarily silt and clay.

The main inflow into the Ash Pond is precipitation which is accumulated and transported through channels around the inside of the pond and discharge from the Power Plant. The Ash Pond contents are generally bottom ash (slag) and water. The Ash Pond is located at the upstream end of Sangchris Lake which is a reservoir created as a water supply for the Power Plant and a receiving body for thermal discharges. Pumping operations were added to recycle water back to the plant, in the 1970s. Water is generally recycled through the principal intake structure. A portion of the impoundment's interior storage has had ash material deposited and stabilized over time.

The Ash Pond is made of several embankment dikes forming a perimeter and a single impoundment. The crest elevations generally vary between 605 feet (at the southeast corner) and 620 feet. The water surface elevation is generally maintained around 603.5 feet at the crest of the recycle intake structure. The maximum dam height is approximately 35 feet. The total drainage area is approximately 168 acres. The auxiliary discharge to Sangchris Lake is permitted under NPDES permit #IL0002241 as Outfall E01.

Table 6-1. Plant Impoundment Characteristics

Feature/Parameter	Ash Pond
Maximum Embankment Height	*35 feet
Length of Dam	11,300 feet
Crest Width	12 feet
Crest Elevation	*605 feet
Reservoir Area at Top of Dam	87 acres
Storage Capacity at Top of Dam	321 acre-feet
Primary Spillway Type	*60" Reinforced concrete pipe at base of screen house
Primary Spillway Crest Elevation	*Approximately 603.5'
Storage Capacity at Primary Spillway Elevation	Approximately 213 acre-feet
Reservoir Area at Normal Water Surface Elevation	62 acres
Auxiliary Spillway Type	*3-sided concrete weir chamber (3' side lengths). Flow discharges from 48" CMP at base of weir chamber
Auxiliary Spillway Crest Elevation	*Concrete weir chamber – approximately 604.5'

Notes:

- *Source: "Dam Safety Assessment of CCW Impoundments – Kincaid Generation Slag Field", March 24, 2011. All remaining values are GIS estimated.
- Bathymetric Data obtained from (2015 – Kincaid Topography, prepared by Weaver Consultants Group – December, 2015)
- Elevations are in reference to Mean Sea Level (MSL), NAVD88.

7 BREACH INUNDATION MAP AND POTENTIAL IMPACTS

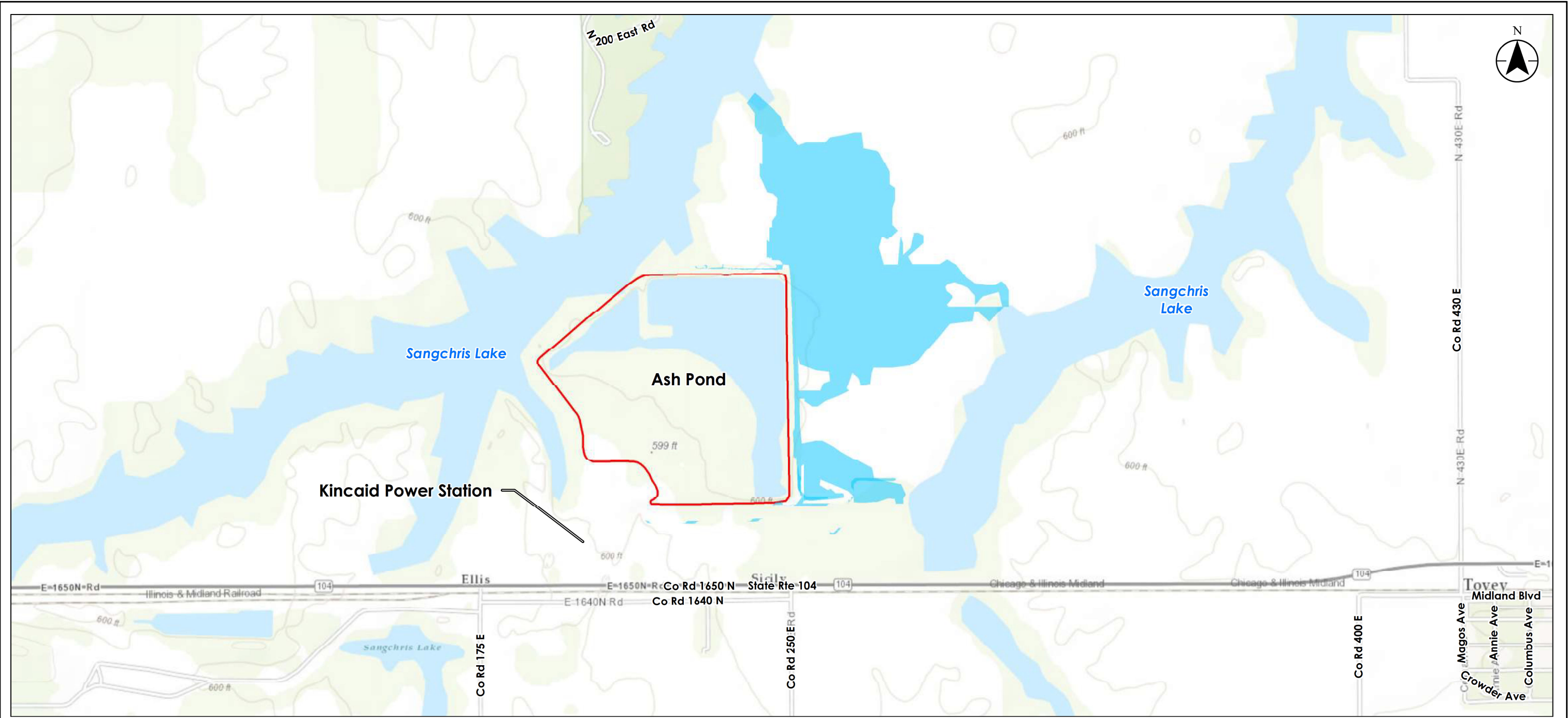
An inundation map for Ash Pond potential breach scenarios is provided in this section. It is the Christian County ESDA/EMA's responsibility to keep a current list of affected parties/properties to contact in the case of emergencies that result in Response Level 2 or 3. This list should encompass all properties within and adjacent to the probable inundation extents shown in the provided map.

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.

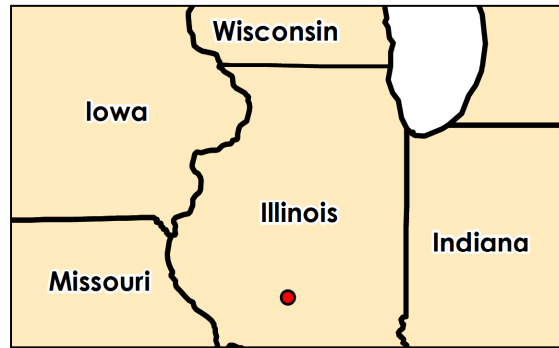
A 2-dimensional (2-D) dam breach analysis was performed for the Ash Pond facility to determine possible inundation limits for the "Sunny Day" and Probable Maximum Flood (PMF) event scenarios. The breach analysis included stormwater runoff calculations, reservoir pool routing and breach failure, and 2-D hydraulic routing of the floodwave into Sangchris Lake.

The inundation limits were mapped using the modeled maximum water surface elevations (WSE) and a combination of digital elevation data from the topographic survey prepared by Weaver Consultants Group – December, 2015 (2015 – Kincaid Topography) and 1/3 Arc Second DEM data downloaded from The National Map website.

The approximate inundation area is illustrated in Figure 7-1.

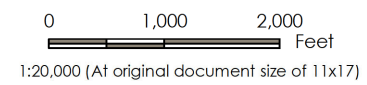


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 Revised: 2017-04-12 By: dhojson



Legend

- CCR Surface Impoundment Boundary
- Expected Breach Inundation Area



Project Location: 175605019
 Latitude: 39.592011
 Longitude: -89.497012
 Christian County, Illinois
 Prepared by DTH on 2017-04-12
 Technical Review by MM on 2017-04-12
 Independent Review by MH on 2017-04-12

Client/Project
 Kincaid Power Station
 Emergency Action Plan

Figure No.
7-1

Title
**Inundation Map
 Ash Pond**

Notes
 1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
 2. Aerial Source: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO,
 3. 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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