

Ash Pond System Emergency Action Plan for CCR Rule Compliance

Prepared by

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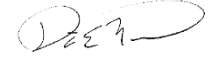
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**AES INDIANA
HARDING STREET GENERATING STATION
ASH POND SYSTEM EMERGENCY ACTION PLAN FOR CCR RULE COMPLIANCE**

ISSUE SUMMARY & CERTIFICATION

This is to confirm that this report has been prepared, reviewed, and approved in accordance with Sargent & Lundy's Standard Operating Procedure SOP-0405, which is based on ANSI/ISO/ASSQC Q9001 Quality Management Systems.

<u>Rev.</u>	<u>Issue Purpose</u>	<u>Issue Date</u>	<u>Prepared By</u>	<u>Reviewed By</u>	<u>Approved By</u>	<u>Pages Affected</u>
3	Use	03/07/2023	A. Sahlas	T. Dehlin	D. Nielson	All
						

I certify that this amended emergency action plan meets the requirements of 40 CFR 257.73(a)(3).

I certify that this report was prepared by me or under my direct supervision and that I am a registered professional engineer under the laws of the State of Indiana.

Certified By: David E. Nielson Date: March 7, 2023

Seal:



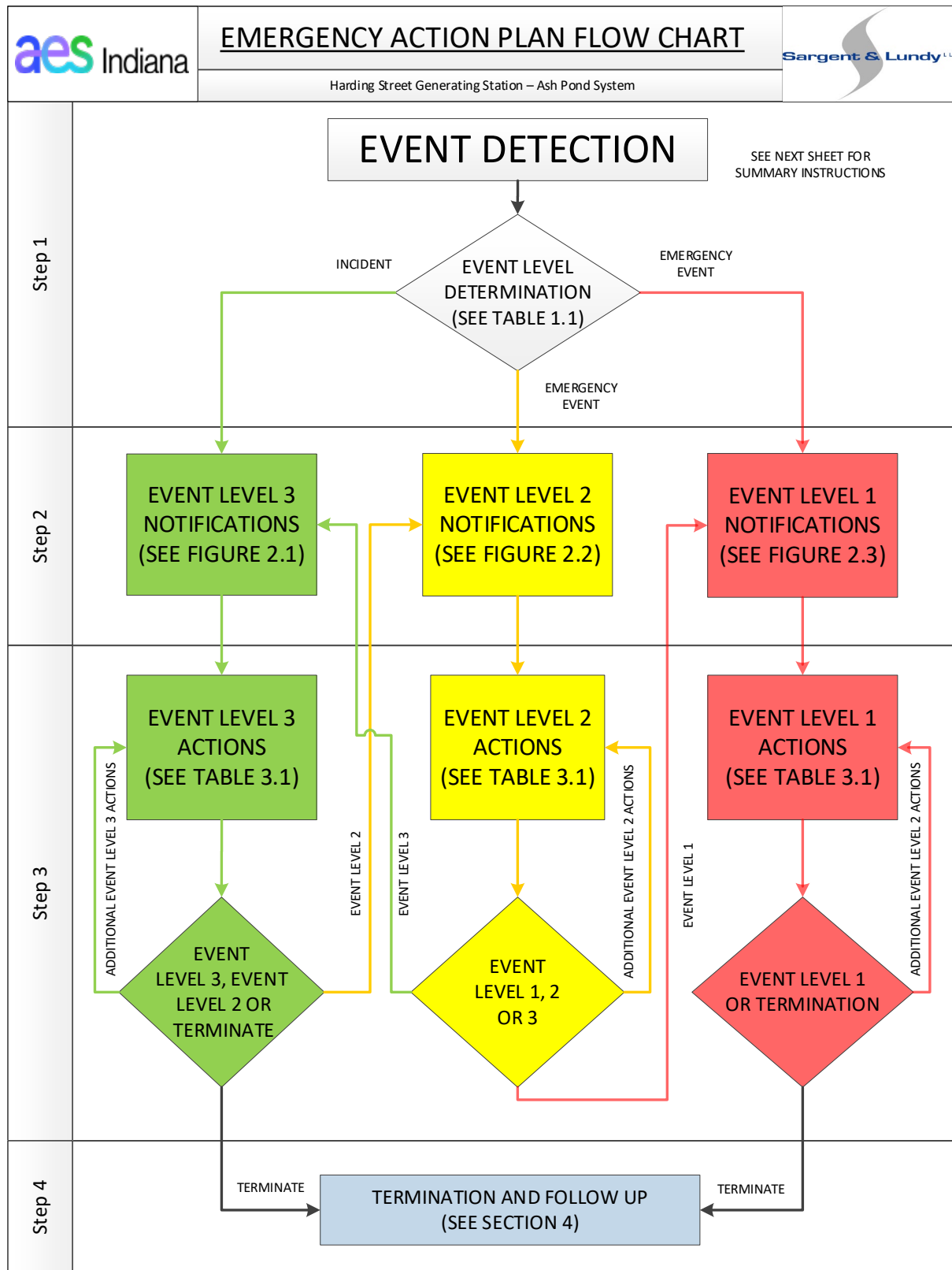


FIGURE i

SUMMARY OF EMERGENCY ACTION PLAN PROCESS

There are four steps that must be followed anytime an incident or emergency event is detected at the Harding Street Generating Station – Ash Pond System. The steps are:

- Step 1: Event Detection and Level Determination
- Step 2: Notification and Communication
- Step 3: Expected Actions
- Step 4: Termination and Follow-up

Incident and emergency events are defined in Section 1.2.1 and Table 1.1 of this Emergency Action Plan (EAP). Specific actions required for each step will depend on the severity of the situation as defined during Step 1. The actions required for each step of the EAP are summarized graphically on the EAP Flow Chart (Figure i) and are described in the corresponding EAP Section. A summary of each step is provided below.

Step 1 – Event Detection and Level Determination

During the initial step, an incident or emergency event is detected within the Ash Pond System and classified by the EAP Coordinator (or designee) into one of the following event levels:

- Event Level 3: Incident, slowly developing
- Event Level 2: Emergency Event, rapidly developing
- Event Level 1: Emergency Event, imminent dike failure or flash flooding

Information to help the EAP Coordinator (or designee) determine which of the above event levels is applicable is provided in Section 1 of this EAP.

Step 2 – Notification and Communication

After the event level has been determined, notifications are made in accordance with the appropriate notification flow chart provided in Section 2 of this EAP.

Step 3 – Expected Actions

After the initial notifications are made, the EAP Coordinator (or designee) should refer to Table 3.1 and confer with the Engineer Lead (or designee) to develop and execute appropriate preventative actions. During this step of the EAP, there is a continuous process of taking actions, assessing the status of the situation, and keeping others informed through communication channels established during the initial notifications. The EAP may go through multiple event levels during Steps 2 and 3 as the situation either improves or worsens.

Step 4 – Termination and Follow-Up

Once the event has ended or been resolved, termination and follow-up procedures should be followed as outlined in Section 4 of this EAP. EAP operations can only be terminated after completing operations under Event Level 3 or 1. If Event Level 2 is declared, the operations must be designated Event Level 3 or 1 before terminating the EAP operations.

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PRIVACY STATEMENT

This document contains private contact information that is to be used only in matters related to this EAP. The contact information included herein is provided as required for the prompt communication of critical life safety information and is subject to the provisions of the applicable Federal and State privacy acts and regulations.

PURPOSE

The purpose of the EAP is to reduce the risk of human loss of life and injury during an incident or emergency event at the Harding Street Generating Station – Ash Pond System.

A secondary purpose of the EAP is to minimize the potential for property damage during an incident or emergency event at Harding Street Generating Station – Ash Pond System. The intent of the EAP is to identify problems early and repair them before they result in failure of any of the dikes at the Harding Street Generating Station.

ASH POND SYSTEM

The location and layout of the ash ponds and associated dikes at the Ash Pond System of the Harding Street Generating Station are shown on Figure 5.2. There are four active ash ponds at the station. The ponds are identified as Pond 1, Pond 2A/2B, and Pond 3. Construction details of the perimeter dikes for these ponds are available in the History of Construction prepared pursuant to 40 CFR 257.73(c), which is available for download on the Harding Street Generating Station's public CCR website (<https://ccr-hardingstreet.com>). Former Ponds 2, 4, 4A, and 4B were regraded prior to October 19, 2015 such that these former ponds can no longer impound water.

Coal-fired power generation ceased at the Harding Street site when the station converted to natural gas for generating electricity in early 2016, and AES Indiana initiated closure of Ponds 1, 2A/2B, and 3 in accordance with 40 CFR 257.102 on October 1, 2020. The aforementioned ponds will be closed in accordance with the CCR Closure Plan and the State of Indiana's Closure Plan when approved by the Indiana Department of Environmental Management.

Prior to converting to natural gas, the station produced power by burning coal. Ash produced as a byproduct of generating electricity was combined with water and then transported and discharged into the northwest portion of Pond 1, the station's initial ash settling pond. Ash particles were allowed to settle out on the floor of the pond as the water moved across the pond to the pond's outlet pipes. Processed water from Pond 1 was then transferred to Pond 2A/2B through a 30-inch-diameter corrugated metal pipe where the ash particles were allowed additional sedimentation time. The wastewater subsequently discharged from Pond 2A/2B into Pond 3 through a 24-inch-diameter culvert. Following final sedimentation of the finer waste constituents in Pond 3, the processed water discharged into a drop outlet structure (National Pollutant Discharge Elimination System-permitted Outfall 006) through three 12-inch-diameter welded steel pipes. An 18-inch-diameter reinforced concrete pipe then discharged the processed water into Lick Creek.

EAP ANNUAL REVIEW

This EAP document will require an annual review and update to stay current. For annual review and periodic test procedures, see Section 6.6.1.

REVISIONS

For revision procedures, see Section 6.6.1.

Revision No.	Date	Revisions Made
0	03/23/2017	EAP published in IDNR 2012 format
1	01/14/2020	<p>Modified Ash Pond System description</p> <p>Revised Section 1.2.4, including:</p> <ul style="list-style-type: none"> • Addition of “Environmental Affairs Director” to EAP personnel • Renamed “Engineering Director” and “On-Call Engineer” to “Engineer Lead” and “Professional Engineer,” respectively, and updated corresponding responsibilities <p>Updated contact information in notification flowcharts (Figures 2.1, 2.2, and 2.3)</p> <p>Added recommended actions for the Engineer Lead and Professional Engineer in the Action Data Sheets in Section 3</p> <p>Modified Form 3.1</p> <p>Added Section 6, “Emergency Preparedness”</p> <p>Moved Appendix D provisions to Sections 6.1 and 6.2</p> <p>Added Form D.2</p>
2	03/01/2022	<p>Completed five-year review of EAP in accordance with 40 CFR 257.73(a)(3)(ii)(B)</p> <p>Updated AES Indiana names and logos</p> <p>Modified Ash Pond System description</p> <p>Updated media contact information in Section 2.3</p> <p>Updated contact information for EAP participants in notification flowcharts (Figures 2.1, 2.2, and 2.3)</p> <p>Updated Figures 5.1 through 5.5</p> <p>Updated inundation map narrative in Appendix B</p> <p>Updated EAP personnel list in Appendix E</p>
3	03/07/2023	<p>Updated contact information for EAP participants in notification flowcharts (Figures 2.1, 2.2, and 2.3)</p> <p>Updated EAP personnel list in Appendix E</p>

SECTION 1.

EVENT DETECTION AND LEVEL DETERMINATION

This section of the EAP describes the first step that must be followed whenever an incident or emergency event is detected at the Ash Pond System at AES Indiana's (AESI) Harding Street Generating Station. The layout and location of ash ponds and associated dikes at the Ash Pond System are shown on Figure 5.2. This section also describes event detection and information to assist the EAP Coordinator (or designee) in determining the appropriate level for the event.

1.1 EVENT DETECTION

Incidents or emergency events may be detected by various means including but not limited to the following:

1. Results of inspections.
2. Instrument readings on the dikes or in the plant.
3. Notification by local emergency services personnel, especially during a severe weather or other natural event such as an earthquake.
4. Notification by on-site employees.
5. Notification by off-site personnel or neighbors.

After any incident or emergency event is detected and reported to the EAP Coordinator, the EAP Coordinator (or designee) is responsible for determining the level of the event. If the Local Emergency Planning Commission and/or Marion County Emergency Management Agency receive a call regarding observations of an incident or emergency event at the Ash Pond System, the dispatcher shall first contact the EAP Coordinator. The EAP Coordinator shall determine the appropriate event level (as defined in Section 1.2.2) and advise the dispatcher of the event level.

1.2 EVENT LEVEL DETERMINATION

1.2.1 Incidents and Emergency Events

An incident is defined as an event, which takes place, or a condition, which is slowly developing, that is not normally encountered in the routine operation of the Ash Pond System, or necessitates a variation from Standard Operating Procedures. Such events are more common than emergency conditions and often offer time to conduct preplanned responses to the slowly developing situation. If addressed in a timely manner, such events can often be prevented from progressing into a much worse event. An incident requires operations in accordance with Event Level 3 of this EAP.

An emergency event is defined as an event, which takes place, or a condition, which develops, that is of a serious nature that may endanger the dikes of the Ash Pond System and/or persons or property and demands immediate attention. An emergency event requires immediate operations in accordance with Event Level 2 or 1 of this EAP.

1.2.2 Level Determination

The EAP Coordinator shall be responsible for defining incidents or emergency events as one of the three following event levels:

Event Level 3 – This is an incident that is defined as a slowly developing situation that may endanger the structural integrity of the Ash Pond System dikes. This event level also involves a determination if it will be possible to retain the structural integrity of the Ash Pond System dikes and avoid release of fluids and ash. If it is likely that the structural integrity of the Ash Pond System cannot be maintained, then Event Level 3 is not applicable.

Event Level 2 – This is an emergency event that is defined as rapidly developing and could quickly lead to dike failure and flash flooding downstream of the Ash Pond System. This event level also involves a determination if it may be possible to retain the structural integrity of the Ash Pond System dikes and avoid release of fluids and ash beyond the perimeter of the existing dike involved. All decisions to prevent this occurrence must fully consider the safety of those involved in any repairs to be undertaken. If fluid levels within the ash pond in question cannot be reduced significantly to prevent release, the possibility of repair should not be considered. If it is likely that the structural integrity of the Ash Pond System cannot be maintained, and that the release of fluids and ash beyond the Ash Pond System’s boundary cannot be avoided, then Event Level 2 is not applicable.

Event Level 1 – This is an emergency event that is defined as the likely and imminent dike failure and the possibility of flash flooding downstream of the dike. This event may include the determination that it will not be possible to retain the structural integrity of the Ash Pond System dikes to avoid release of fluids and ash.

1.2.3 Level Determination Guidance

Table 1.1 shall be used as a guide for determining the appropriate event level. This table attempts to be all inclusive; however, an event or condition may arise that is not covered in this table. In the circumstance of multiple events occurring within the Ash Pond System with conflicting event levels, always designate the higher event level as the governing event level.

1.2.4 Roles, Responsibilities, and Authority

The EAP personnel for the Harding Street Generating Station Ash Pond System include the following:

EAP Coordinator – The EAP Coordinator is a designated AESI employee experienced with the Harding Street Ash Pond System. The EAP Coordinator shall function as the EAP operations coordinator and/or Incident Manager during any of the three event levels of operation described in this EAP. The EAP Coordinator has the authority and responsibility to take the necessary actions described in this EAP. As the situation requires and as time permits, the EAP Coordinator should consult with the Engineer Lead before initiating notifications described in this EAP. In the case of Event Levels 2 and 1, the EAP Coordinator and Engineer Lead should consult with the Professional Engineer throughout the decision process regarding actions to be undertaken.

The EAP Coordinator is responsible for providing initial, timely, and accurate notifications to the Warning/Evacuation Director and the Environmental Affairs Director after an Event Level 2 or 1 has been determined. The EAP Coordinator is also responsible for providing subsequent updates of the situation to

the Warning/Evacuation Director to assist in making timely and accurate decisions regarding warning and evacuation responsibilities.

Engineer Lead – The Engineer Lead is a designated AESI employee responsible for engaging and managing the Professional Engineer. Once an Event Level 2 or 1 is terminated, the Engineer Lead is responsible for submitting to the EAP Coordinator, as soon as possible, an accurate summary document of the field observations and activities of the event.

Professional Engineer – The Professional Engineer is a professional engineer licensed in the State of Indiana with special expertise in civil/geotechnical engineering and the design and operation of ash ponds and is experienced with the facility's Ash Pond System. The Professional Engineer is responsible for supporting the EAP Coordinator and the Engineer Lead with issues associated with technical aspects of the Ash Pond System dikes, event level determinations, evaluations and terminations, remedies and associated implementation, and anything that pertains to the condition of the dikes within the Ash Pond system, including any necessary follow-up activities. The Professional Engineer will also assist in performing annual reviews, training, local emergency responder's meetings, and issuing updates to this EAP.

Warning/Evacuation Director – The Warning/Evacuation Director is a Local Emergency Planning Commission or Emergency Management Agency member in Morgan County, Indiana, who is familiar with the Harding Street Generating Station and its Ash Pond System. The Warning/Evacuation Director is primarily responsible for coordinating the preparation to evacuate people downstream of the Harding Street Generating Station, as well as the implementation of the evacuation itself, if necessary. Should an incident or emergency situation be detected by someone outside of the station, the Warning/Evacuation Director should notify the EAP Coordinator so that the latter can then notify other interested parties.

Environmental Affairs Director – The Environmental Affairs Director is a designated AESI employee familiar with the Harding Street Generating Station and its Ash Pond System, and is experienced in assessing and responding to environmental impacts from an emergency event. The Environmental Affairs Director is primarily responsible for assessing the environmental consequences of an emergency event, and for communicating these consequences, in addition to other relevant environmental data, to the EAP Coordinator during an emergency event.

External Affairs Manager – The External Affairs Manager is a designated AESI employee within their external affairs group who is familiar with the Harding Street Generating Station and its Ash Pond System. The External Affairs Manager is primarily responsible for representing AESI to local, state, and/or national media personnel during an emergency event through prepared statements and official press releases.

TABLE 1.1 – EVENT LEVEL DETERMINATION GUIDANCE

Event	Observation	Event Level
Flooding and Overtopping	In the event of potential flooding, the water surface elevation of each pond would be observed using the installed staff gauges and compared to each Event Level's specified threshold, which was developed from the elevations provided in Table 1.2. For an Event Level 3 to be declared as a result of flooding, the pond water surface elevation, h , would be as follows: Pond 1: $684 \text{ ft} < h \leq 684.5 \text{ ft}$ Pond 2A/2B: $682.7 \text{ ft} < h \leq 683.2 \text{ ft}$ Pond 3: $679.4 \text{ ft} < h \leq 679.9 \text{ ft}$	3
	For an Event Level 2 to be declared as a result of flooding, no water would be overtopping the perimeter dikes, and the pond water surface elevation would be as follows: Pond 1: $684.5 \text{ ft} < h \leq 687.5 \text{ ft}$ Pond 2A/2B: $683.2 \text{ ft} < h \leq 685.5 \text{ ft}$ Pond 3: $679.9 \text{ ft} < h \leq 684.5 \text{ ft}$	2
	For an Event Level 1 to be declared as a result of flooding, some waves may be observed to be flowing over the tops of the perimeter dikes, and the pond water surface elevation would be as follows: Pond 1: $h > 687.5 \text{ ft}$ Pond 2A/2B: $h > 685.5 \text{ ft}$ Pond 3: $h > 684.5 \text{ ft}$	1
Earthquake and Aftershocks	This minimum event level will be declared any time an earthquake occurs within 50 miles of the station regardless of the earthquake magnitude. A field inspection of the Ash Pond System dikes shall immediately commence to determine if an Event Level 2 or 1 is warranted.	3
	This is the minimum event level to be declared in the event that the post-earthquake inspections of the Ash Pond System indicate damage has occurred to the ash pond perimeter dikes, but there is no indication of fluids escaping from the ponds. Observed damage may include, but not be limited to, sloughing, vertical or horizontal cracks, and/or bulging.	2
	This Event Level will be declared in the event that the post-earthquake inspections indicate that there are some fluids escaping from the pond through the Ash Pond System perimeter dikes. Alternatively, this Event Level will be declared if seismic activity results in significant damage to the Harding Street Generating Station facilities and emergency actions at the power block do not allow post-earthquake inspections.	1
Seepage and Erosion	This event level should be declared upon discovery of seepage; or, in other words, a slow escape of liquid through the earthen material of any ash pond dike. The discovery of seepage may also coincide with the discovery of surface scouring and erosion. For an Event Level 3, the seepage should be clear and clean of suspended solids and of a relatively low flow rate. This event level may also be declared upon observation of spongy feeling, soft, wet soils located near the downstream toe of a dike.	3

TABLE 1.1 – EVENT LEVEL DETERMINATION GUIDANCE

Event	Observation	Event Level
Seepage and Erosion	This event level should be declared when a significant increase in the seepage flow rate is observed or a discoloration of the flow is observed. This event level should also be declared if minor erosion is observed on the surface of the dike. Erosion can be defined as the scouring of the surface of the dike such that soil material has visibly been removed from the dike surface.	2
	This event level should be declared upon discovery of seepage flow that contains visible evidence of solids or any other indication that significant internal or external erosion is occurring. Such external erosion may be evident by the presence of a significant flow path or erosion channel on the surface of the dike.	1
Cracking and Other Movements	This event level should be declared upon discovery of a new crack greater than ½” but less than 1” in width or observation of movement of the dike which may include sloughing or bulging.	3
	This event level should be declared upon observation of significantly increased cracking (cracks greater than 1” in width) or increased movement areas, but there is no evidence of seepage flow from the pond.	2
	This event level should be declared upon observation of significantly increased cracking (cracks greater than 1” in width) or increased movement areas and there is evidence of seepage flow from the pond, such as the sloughed area is moist or water is visibly flowing out of the dike.	1
Discharge Piping Valve Failure or Blocked Discharge Pipes	This event level should be declared upon discovery of a blocked discharge pipe or a malfunctioning discharge valve. This event level should be declared even if the valve cannot be closed.	3
	This event level should be declared upon discovery of a blocked discharge pipe or a malfunctioning discharge valve and the pond water surface elevation, <i>h</i> , is as follows: Pond 1: 684.5 ft < <i>h</i> ≤ 687.5 ft Pond 2A/2B: 683.2 ft < <i>h</i> ≤ 685.5 ft Pond 3: 679.9 ft < <i>h</i> ≤ 684.5 ft	2
	This event level should be declared upon discovery of a blocked discharge pipe or a malfunctioning discharge valve and the pond water surface elevation, <i>h</i> , is as follows: Pond 1: <i>h</i> > 687.5 ft Pond 2A/2B: <i>h</i> > 685.5 ft Pond 3: <i>h</i> > 684.5 ft	1
Sabotage	This event level should be declared if sabotage is ever suspected to have occurred at any location within the Harding Street Generating Station and there is no visible evidence of leakage from the Ash Pond System dikes.	3
	This event level should be declared if sabotage is ever determined to have occurred at any location within the Harding Street Generating Station and there is no visible evidence of leakage from the Ash Pond System dikes.	2

TABLE 1.1 – EVENT LEVEL DETERMINATION GUIDANCE

Event	Observation	Event Level
Sabotage	This event level should be declared if sabotage is ever determined to have occurred at any location within the Harding Street Generating Station and there is visible evidence of leakage from the Ash Pond System dikes.	1

TABLE 1.2 – POND DIKE ELEVATIONS AND MAXIMUM SURFACE WATER ELEVATIONS

Pond Name	Existing Minimum Dike Crest Elevation ¹ (feet)	Maximum Design Water Surface Elevation ¹ (feet)
Pond 1	688	684
Pond 2A/2B	686	682.7
Pond 3	685	679.4

¹ Elevations are with respect to the North American Vertical Datum of 1988 (NAVD88).

SECTION 2. NOTIFICATION AND COMMUNICATION

This section of the EAP describes the appropriate notifications that should be made after the EAP Coordinator has determined the event level as an Event Level 3, 2, or 1. This section also outlines the communication systems that are available for making notifications as well as a Public Affairs Plan with sample media release and a list of media contacts. Notifications should be made in accordance with the appropriate Notification Flow Chart provided in this Section (Figures 2.1, 2.2, and 2.3).

2.1 COMMUNICATION SYSTEMS

Every effort will be made to communicate the occurrence of an incident or event to the EAP Coordinator as soon as possible. Communication regarding the event details will be made by plant personnel observing the situation using systems most available at the time that the event is observed. Methods of communication available include, in order of preference; cell phones, radios, GAI-Tronics, pagers, or e-mails. The EAP Coordinator should then contact all other interested parties in accordance with the appropriate Notification Flow Chart by telephone.

2.2 SUGGESTED PRESCRIPTED MESSAGES

The following prescribed messages may be used as a guide to communicate the status of an event. Keep in mind that clarity and brevity are the most important qualities of these messages. It is recommended that the EAP Coordinator not allow conversations to include causes or responsibility of incidents. Only facts, future actions, and future communication plans should be discussed.

Event Level 3

- This is the Emergency Action Plan Coordinator. I am making this call in accordance with the Harding Street Ash Pond System EAP.
- An incident has been detected at the Ash Pond System.
- The EAP has been activated, currently at the lowest emergency level (Level 3).
- If a problem occurs, flooding along the White River, in and around the Harding Street Generating Station, and along Lick Creek is possible.
- The situation is being monitored to determine if any evacuation warnings are necessary.
- We will keep you apprised of the situation. The best telephone number to reach me during this event is ... (state the best number to reach you).

Event Level 2

- This is the Emergency Action Plan Coordinator. I am making this call in accordance with the Harding Street Ash Pond System EAP.
- Problems have occurred with the Ash Pond System.
- The EAP has been activated, currently at the intermediate emergency level (Level 2).
- Flooding along the White River, in and around the Harding Street Generating Station, and along Lick Creek is possible.
- Prepare to limit access to (1) areas along the White River between S Harding Street Bridge and the Interstate 465 Bridge, and to (2) station areas near the ash pond dikes and Lick Creek.
- We will keep you apprised of the situation. The best telephone number to reach me during this event is ... (state the best number to reach you).

Event Level 1

- This is the Emergency Action Plan Coordinator. I am making this call in accordance with the Harding Street Ash Pond System EAP.
- Problems have occurred with the Ash Pond System.
- The EAP has been activated, currently at the highest emergency level (Level 1).
- Flooding on station property near Lick Creek and along the White River will occur.
- Immediately establish restricted access areas along the White River between the S Harding Street Bridge upstream of the station and the Interstate 465 Bridge downstream of the station.
- Immediately instruct security to limit access to the Ash Pond System.
- Immediately instruct plant personnel to move to higher ground away from the Ash Pond System and Lick Creek.
- We will keep you apprised of the situation. The best telephone number to reach me during this event is ... (state the best number to reach you).

2.3 EXTERNAL AFFAIRS PLAN

In the event of an incident or an emergency condition, the External Affairs Manager will be alerted and briefed on the situation. The External Affairs Manager will prepare and deliver a message for public release based on the existing conditions and information from the Environmental Affairs Director or designee, or other sources.

Preparation of warning messages should begin as soon as their potential need is apparent so that they can be issued promptly upon determination of a Level 2 or Level 1 event. Where time is available for its preparation, the initial message should contain all pertinent information. However, in some cases, an emergency condition may be declared with little or no advance notice. The following example messages provide a model for the first announcements in such cases for Event Levels 2 and 1. Subsequent announcements should provide additional details.

Announcement for Possible Dike Failure Problem (Event Level 2)

AES Indiana announced at (time) today that an emergency condition existed around the Harding Street Generating Station Ash Pond System dikes. The Ash Pond System is located two miles upstream from the Interstate 465 Bridge over the White River, southwest of downtown Indianapolis, Indiana.

The AESI spokesperson said that actions were underway to prevent failure of the Ash Pond System dikes and there is no immediate danger of the dikes failing. However, as a precautionary measure, those located on or along the banks of the White River downstream of the S Harding Street Bridge and upstream of the Interstate 465 Bridge should prepare to evacuate.

Additional Information will be released as promptly as possible.

Announcement for Possible Dike Failure Imminent or in Progress (Event Level 1)

URGENT, URGENT: AES Indiana announced at (time) today that an emergency condition existed around the Harding Street Generating Station Ash Pond System. The Ash Pond System is located approximately two miles upstream from the Interstate 465 Bridge over the White River, southwest of downtown Indianapolis, Indiana.

Attempts to save the dikes are underway but their success cannot be determined as of yet. Anyone located on or along the banks of the White River downstream of the S Harding Street Bridge and

upstream of the Interstate 465 Bridge should evacuate to higher ground **IMMEDIATELY!** If the dike fails, water will take less than 30 minutes for the flood wave to travel from the dike breach to the Interstate 465 Bridge. Areas closer to the station will be flooded sooner.

Additional information will be released as promptly as possible.

Media Contacts

The National Weather Service shall be the primary media outlet through which emergency announcements are released to the news media. Radio and television stations that are likely to provide coverage to the area in danger are also included below in the case that the National Weather Source cannot be reached.

Primary Source

NATIONAL WEATHER SERVICE (24-hour telephone number): (317)-856-0664

Secondary Sources (Shall be contacted only if the primary source cannot be reached.)

Television Stations

WTHR (ATSC CHANNEL 13.1) (24-hour telephone number): (317)-636-1313

WISH (ATSC CHANNEL 8.1) (24-hour telephone number): (317)-923-8888

WRTV (ATSC CHANNEL 6.1) (24-hour telephone number): (317)-635-9788

WXIN-TV (ATSC CHANNEL 59.1-4.1/29.1) (24-hour telephone number): (317)-632-5900

Radio Stations

WCBK 102.3 FM (24-hour telephone number): (317)-831-3394

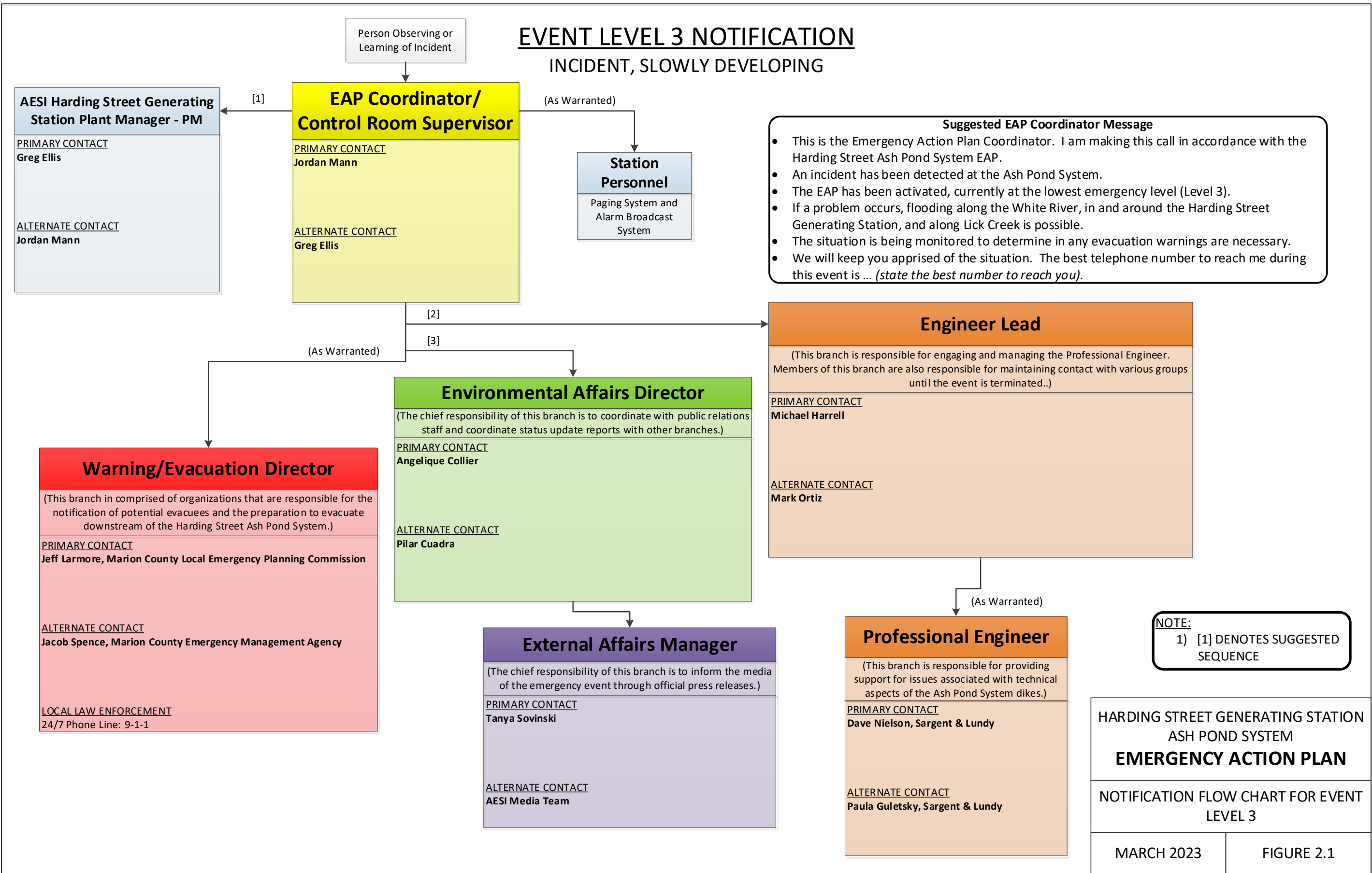
WTTS 92.3 FM (24-hour telephone number): (317)-972-9887

WFBQ 94.7 FM (24-hour telephone number): (317)-257-7565

WFMS 95.5 FM (24-hour telephone number): (317)-842-9550

EVENT LEVEL 3 NOTIFICATION

INCIDENT, SLOWLY DEVELOPING



AESI Harding Street Generating Station Plant Manager - PM

PRIMARY CONTACT
Greg Ellis

ALTERNATE CONTACT
Jordan Mann

EAP Coordinator/Control Room Supervisor

PRIMARY CONTACT
Jordan Mann

ALTERNATE CONTACT
Greg Ellis

Station Personnel

Paging System and Alarm Broadcast System

Suggested EAP Coordinator Message

- This is the Emergency Action Plan Coordinator. I am making this call in accordance with the Harding Street Ash Pond System EAP.
- An incident has been detected at the Ash Pond System.
- The EAP has been activated, currently at the lowest emergency level (Level 3).
- If a problem occurs, flooding along the White River, in and around the Harding Street Generating Station, and along Lick Creek is possible.
- The situation is being monitored to determine in any evacuation warnings are necessary.
- We will keep you apprised of the situation. The best telephone number to reach me during this event is ... *(state the best number to reach you)*.

Warning/Evacuation Director

(This branch in comprised of organizations that are responsible for the notification of potential evacuees and the preparation to evacuate downstream of the Harding Street Ash Pond System.)

PRIMARY CONTACT
Jeff Larmore, Marion County Local Emergency Planning Commission

ALTERNATE CONTACT
Jacob Spence, Marion County Emergency Management Agency

LOCAL LAW ENFORCEMENT
24/7 Phone Line: 9-1-1

Environmental Affairs Director

(The chief responsibility of this branch is to coordinate with public relations staff and coordinate status update reports with other branches.)

PRIMARY CONTACT
Angelique Collier

ALTERNATE CONTACT
Pilar Cuadra

Engineer Lead

(This branch is responsible for engaging and managing the Professional Engineer. Members of this branch are also responsible for maintaining contact with various groups until the event is terminated..)

PRIMARY CONTACT
Michael Harrell

ALTERNATE CONTACT
Mark Ortiz

External Affairs Manager

(The chief responsibility of this branch is to inform the media of the emergency event through official press releases.)

PRIMARY CONTACT
Tanya Sovinski

ALTERNATE CONTACT
AESI Media Team

Professional Engineer

(This branch is responsible for providing support for issues associated with technical aspects of the Ash Pond System dikes.)

PRIMARY CONTACT
Dave Nielson, Sargent & Lundy

ALTERNATE CONTACT
Paula Guletsky, Sargent & Lundy

NOTE:
1) [1] DENOTES SUGGESTED SEQUENCE

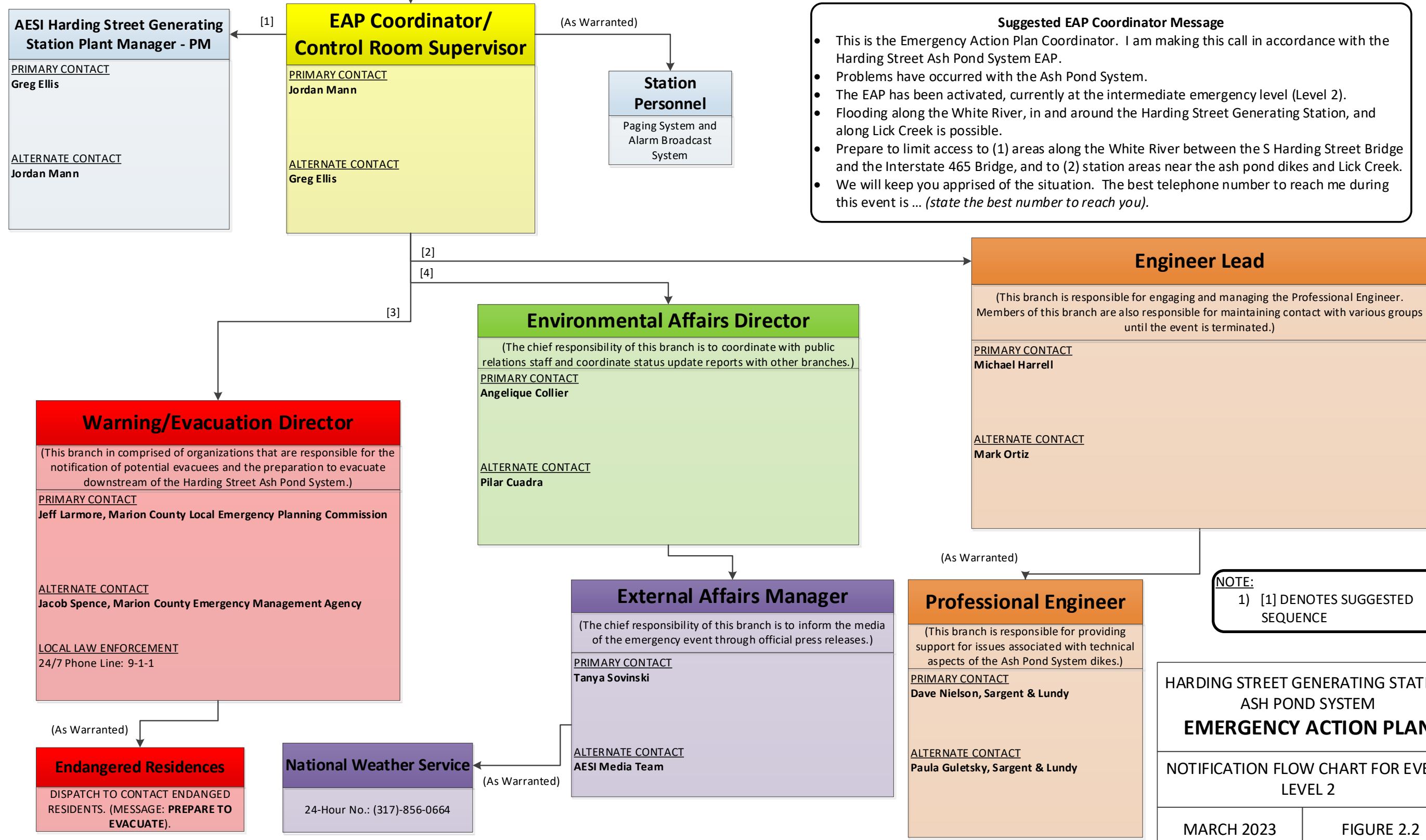
**HARDING STREET GENERATING STATION
ASH POND SYSTEM
EMERGENCY ACTION PLAN**

**NOTIFICATION FLOW CHART FOR EVENT
LEVEL 3**

MARCH 2023 FIGURE 2.1

EVENT LEVEL 2 NOTIFICATION

EMERGENCY EVENT, RAPIDLY DEVELOPING



Suggested EAP Coordinator Message

- This is the Emergency Action Plan Coordinator. I am making this call in accordance with the Harding Street Ash Pond System EAP.
- Problems have occurred with the Ash Pond System.
- The EAP has been activated, currently at the intermediate emergency level (Level 2).
- Flooding along the White River, in and around the Harding Street Generating Station, and along Lick Creek is possible.
- Prepare to limit access to (1) areas along the White River between the S Harding Street Bridge and the Interstate 465 Bridge, and to (2) station areas near the ash pond dikes and Lick Creek.
- We will keep you apprised of the situation. The best telephone number to reach me during this event is ... *(state the best number to reach you)*.

NOTE:
1) [1] DENOTES SUGGESTED SEQUENCE

HARDING STREET GENERATING STATION ASH POND SYSTEM EMERGENCY ACTION PLAN	
NOTIFICATION FLOW CHART FOR EVENT LEVEL 2	
MARCH 2023	FIGURE 2.2

EVENT LEVEL 1 NOTIFICATION

EMERGENCY EVENT, IMMINENT DIKE FAILURE OF FLASH FLOOD

Person Observing or Learning of Incident

**EAP Coordinator/
Control Room Supervisor**

PRIMARY CONTACT
Jordan Mann

ALTERNATE CONTACT
Greg Ellis

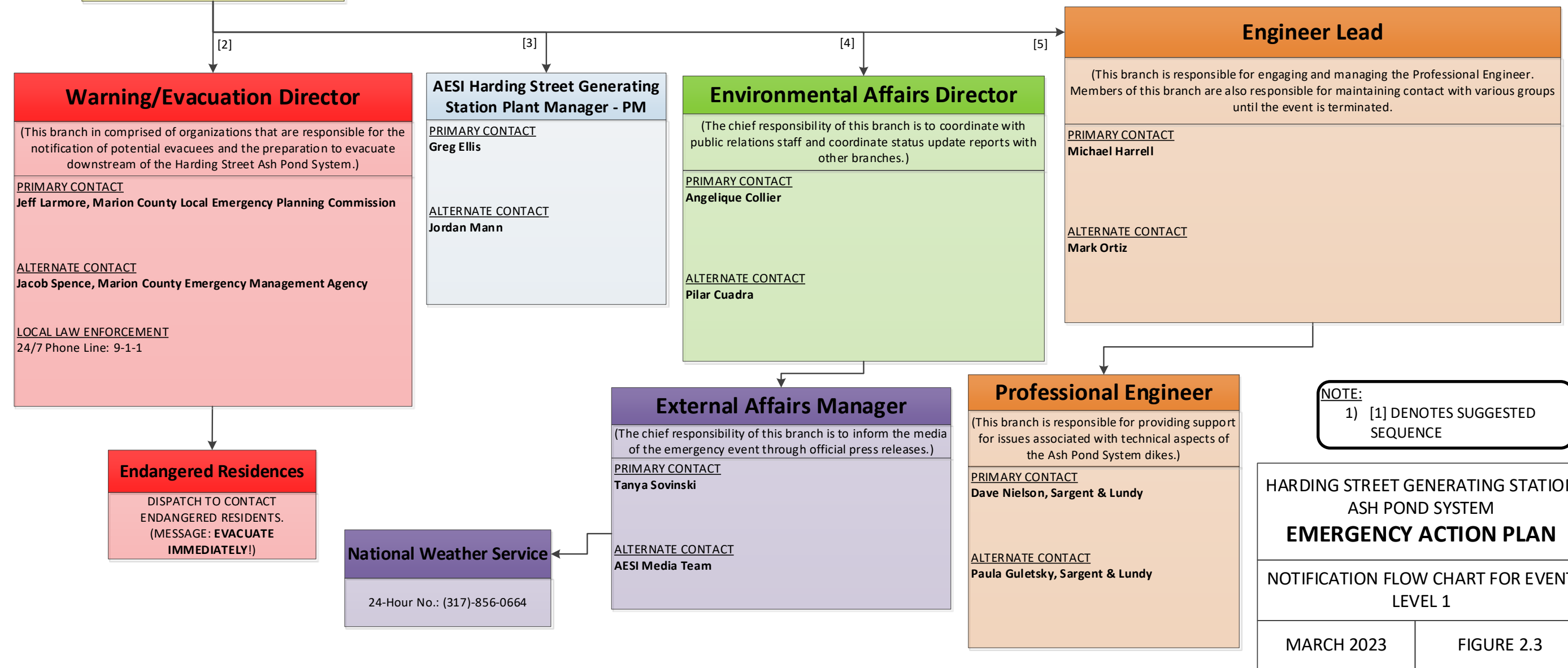
[1]

Station Personnel

Paging System and Alarm Broadcast System

Suggested EAP Coordinator Message

- This is the Emergency Action Plan Coordinator. I am making this call in accordance with the Harding Street Ash Pond System EAP.
- Problems have occurred with the Ash Pond System.
- The EAP has been activated, currently at the highest emergency level (Level 1).
- Flooding on Station property near Lick Creek and along the White River will occur.
- **Immediately** establish restricted access areas along the White River between the S Harding Street Bridge upstream of the Station and the Interstate 465 Bridge downstream of the Station.
- **Immediately** instruct security to limit access to the Ash Pond System.
- **Immediately** instruct plant personnel to move to higher ground away from the Ash Pond System and Lick Creek.
- We will keep you apprised of the situation. The best telephone number to reach me during this event is ... *(state the best number to reach you).*



NOTE:
1) [1] DENOTES SUGGESTED SEQUENCE

HARDING STREET GENERATING STATION
ASH POND SYSTEM
EMERGENCY ACTION PLAN

NOTIFICATION FLOW CHART FOR EVENT
LEVEL 1

MARCH 2023	FIGURE 2.3
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SECTION 3. EXPECTED ACTIONS

3.1 ACTION DATA SHEETS

After the EAP Coordinator (or designee) has determined the event level and has made the appropriate notifications, the EAP Coordinator shall take action using the general procedures outlined in the Action Data Sheets that follow as a guide. Table 3.1 is an index of the Action Data Sheets.

The Action Data Sheets should be reviewed by the Engineer Lead (or designee) and/or the Professional Engineer when possible and time permits. If an event is not adequately covered by one of the general procedures outlined in the following procedures, adapt an Action Data Sheet of a similar event and event level specific to the event that requires additional or varied actions.

TABLE 3.1 – ACTION DATA SHEET INDEX

Event	Event Level	Action Data Sheet
Flooding and Overtopping	3	A3
	2	A2
	1	A1
Earthquake and Aftershocks	3	B3
	2	B2
	1	B1
Seepage and Erosion	3	C3
	2	C2
	1	C1
Cracking and other Movements	3	D3
	2	D2
	1	D1
Discharge Piping Valve Failure or Blocked Discharge Pipes	3	E3
	2	E2
	1	E1
Sabotage	3	F3
	2	F2
	1	F1

EVENT: Flooding and Overtopping LEVEL: 3		ACTION DATA SHEET: A3	
RECOMMENDED ACTIONS			
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Monitor the installed staff gauges to determine if the surface water level within the pond is rising or falling and at what rate. Additionally, a careful inspection of the perimeter dike and inlet/outlet piping for the pond which is at risk of overtopping shall be performed to determine if there are any other signs of degradation, erosion, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and Engineer Lead. B. If the EAP Coordinator is going to terminate EAP operations, send a qualified individual to the site to perform a follow-up inspection. 			<p style="text-align: center;"><u>Time/Date Completed</u></p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event can be terminated. The event may be terminated when the pond water surface elevation drops below the maximum surface water elevation for that particular pond. B. The event remains at the current Event Level. The event level shall remain at Event Level 3 while the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $684 \text{ ft} < h \leq 684.5 \text{ ft}$ • Pond 2A/2B: $682.7 \text{ ft} < h \leq 683.2 \text{ ft}$ • Pond 3: $679.4 \text{ ft} < h \leq 679.9 \text{ ft}$ C. The event warrants escalation to Event Level 2. The Event Level shall be raised to Event Level 2 if the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h > 684.5 \text{ ft}$ • Pond 2A/2B: $h > 683.2 \text{ ft}$ • Pond 3: $h > 679.9 \text{ ft}$ <p>Based on this information, follow the appropriate actions below.</p>			
A) TERMINATION	B) EVENT LEVEL 3	C) EVENT LEVEL 2	
Go to Termination and Follow-up (Section 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Notification Chart	

EVENT: Flooding and Overtopping LEVEL: 2		ACTION DATA SHEET: A2
RECOMMENDED ACTIONS		
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Monitor the installed staff gauges to determine if the water surface level within the pond is rising or falling and at what rate. Continue to perform careful inspections of the perimeter dike and inlet/outlet piping for the subject pond at risk of overtopping on a frequent basis to determine if there are any other signs of degradation, erosion, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and Engineer Lead. B. Prepare to send a qualified individual to the site at the direction of the Engineer Lead. 		<p style="text-align: center;"><u>Time/Date Completed</u></p>
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 3. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. The event level may be downgraded if the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h \leq 684.5$ ft • Pond 2A/2B: $h \leq 683.2$ ft • Pond 3: $h \leq 679.9$ ft B. The event remains at the current Event Level. The event level shall remain at Event Level 2 while the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $684.5 \text{ ft} < h \leq 687.5$ ft • Pond 2A/2B: $683.2 \text{ ft} < h \leq 685.5$ ft • Pond 3: $679.9 \text{ ft} < h \leq 684.5$ ft C. The event warrants escalation to Event Level 1. The Event Level shall be raised to Event Level 1 when the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h > 687.5$ ft • Pond 2A/2B: $h > 685.5$ ft • Pond 3: $h > 684.5$ ft <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 3	B) EVENT LEVEL 2	C) EVENT LEVEL 1
Go to Event Level 3 Notification Chart	Continue recommended actions on this sheet	Go to Event Level 1 Notification Chart

EVENT: Flooding and Overtopping LEVEL: 1	ACTION DATA SHEET: A1	
RECOMMENDED ACTIONS		
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Continue to monitor the installed staff gauges to determine if the water surface level within the pond is rising or falling and at what rate. C. Contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Take all necessary actions to minimize the potential for human loss of life, injury, or property damage should the dikes overtop, erode, and fail. F. Record all information, observations, and actions on an Event Log Form (Form 3.1). G. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. H. Establish a means to keep in frequent contact with the Engineer Lead and the Professional Engineer until Event Level 1 is terminated. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and Engineer Lead. Send a qualified individual to the site as soon as possible. B. If the EAP Coordinator is going to terminate EAP operations, perform a follow-up inspection of the failed area. 		<p style="text-align: center;"><u>Time/Date Completed</u></p>
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 2. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade from Event Level 1 to Event Level 2. The event level may be downgraded if the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h \leq 687.5$ ft • Pond 2A/2B: $h \leq 685.5$ ft • Pond 3: $h \leq 684.5$ ft B. The event remains at the current Event Level. The event level shall remain at Event Level 1 as long as the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h > 687.5$ ft • Pond 2A/2B: $h > 685.5$ ft • Pond 3: $h > 684.5$ ft C. The event can be terminated after a failure event occurs and the pond completely drains to a point where there is no further threat to human loss of life, injury, or property damage. <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 2	B) EVENT LEVEL 1	C) TERMINATED
Go to Event Level 2 Notification Chart	Continue recommended actions on this sheet	Go to Termination and Follow-Up (Section 4)

EVENT: Earthquake and Aftershocks LEVEL: 3		ACTION DATA SHEET: B3	
RECOMMENDED ACTIONS			
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Immediately commence a careful inspection of all perimeter and interior dikes and inlet/outlet piping for the entire Ash Pond System to determine if there are any signs of damage, degradation, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. Record all information, observations, and actions on an Event Log Form (Form 3.1). D. Repeat the inspection at least once per day for three days or until the Event Level has been raised to a Level 2. E. At the completion of the initial field inspection, contact the Engineer Lead and report the latest observations and conditions. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Be prepared to receive field inspection reports. B. Contact the Professional Engineer and provide a summary of the emergency event and/or the corresponding field inspection report. C. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and Engineer Lead. B. If the EAP Coordinator is going to terminate EAP operations, send a qualified individual to the site to perform a follow-up inspection. 			<p>Time/Date Completed</p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event can be terminated. The event may be terminated if there is no observable damage, degradation, or structural instability and more than three days have passed since the earthquake or once all observed damage, degradation, or structural instability has been addressed and/or repaired. B. The event remains at the current Event Level. The event level shall remain at Event Level 3 if there is no observable damage, degradation, or structural instability and less than three days have passed since the earthquake. C. The event warrants escalation to Event Level 2. The Event Level shall be raised to Event Level 2 if a field inspection following the earthquake indicates that damage has occurred to the Ash Pond perimeter dikes, but there is no indication of fluids escaping from the ponds. Observed damage may include, but not be limited to, sloughing, vertical or horizontal cracks, and/or bulging. <p>Based on this information, follow the appropriate actions below.</p>			
A) TERMINATION	B) EVENT LEVEL 3	C) EVENT LEVEL 2	
Go to Termination and Follow-up (Section 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Notification Chart	

EVENT: Earthquake and Aftershocks LEVEL: 2	ACTION DATA SHEET: B2	
RECOMMENDED ACTIONS		
<p><u>EAP Coordinator:</u></p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Continue to monitor the damaged dike of the Ash Pond System and notify the Engineer Lead and Professional Engineer if any significant changes are observed. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. <p><u>Engineer Lead or designee:</u></p> <ul style="list-style-type: none"> A. Be prepared to receive field inspection reports. B. Contact the Professional Engineer and provide a summary of the emergency event and/or the corresponding field inspection reports. C. Coordinate next steps with the Professional Engineer, including any remediation work. <p><u>Professional Engineer:</u></p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and Engineer Lead. B. Prepare to send a qualified individual to the site at the direction of the Engineer Lead. 	<p><u>Time/Date Completed</u></p>	
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 3. The event level may be downgraded once the observed damage, degradation, or structural instability has been addressed and/or repaired. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. B. The event remains at the current Event Level. The event level shall remain at Event Level 2 until the observed damage, degradation or structural instability has been addressed and/or repaired. C. The event warrants escalation to Event Level 1. The Event Level shall be raised to Event Level 1 when it is observed that there are some fluids escaping from the ponds through the Ash Pond System perimeter dikes. <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 3	B) EVENT LEVEL 2	C) EVENT LEVEL 1
Go to Event Level 3 Notification Chart	Continue recommended actions on this sheet	Go to Event Level 1 Notification Chart

EVENT: Earthquake and Aftershocks LEVEL: 1		ACTION DATA SHEET: B1	
RECOMMENDED ACTIONS			
<u>EAP Coordinator:</u>	<ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Continue to monitor the damaged dike of the Ash Pond System and notify the Engineer Lead and Professional Engineer if any significant changes are observed. This should be done without compromising the safety of anyone performing the inspection. C. Contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Take all necessary actions to minimize the potential for human loss of life, injury, or property damage should the dikes fail. F. Record all information, observations, and actions on an Event Log Form (Form 3.1). G. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. H. Establish a means to keep in frequent contact with the Engineer Lead and the Professional Engineer until Event Level 1 is terminated. 	<u>Time/Date Completed</u>	
<u>Engineer Lead:</u>	<ul style="list-style-type: none"> A. Be prepared to receive field inspection reports. B. Contact the Professional Engineer and provide a summary of the emergency event and/or the corresponding field inspection reports. C. Coordinate next steps with the Professional Engineer, including any remediation work. 		
<u>Professional Engineer:</u>	<ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and Engineer Lead. Send a qualified individual to the site as soon as possible. B. If the EAP Coordinator is going to terminate EAP operations, perform a follow-up inspection of the failed area. 		
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 2. The event level may be downgraded once the flow of fluids escaping from the ponds through the Ash Pond System perimeter dikes ceases. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade from Event Level 1 to Event Level 2. B. The event remains at the current Event Level. The event level shall remain at Event Level 1 as long as fluids are escaping from the ponds through the Ash Pond System perimeter dikes. C. The event can be terminated after a failure event occurs and the pond completely drains to a point where there is no further threat to human loss of life, injury, or property damage. <p>Based on this information, follow the appropriate actions below.</p>			
A) EVENT LEVEL 2	B) EVENT LEVEL 1	C) TERMINATED	
Go to Event Level 2 Notification Chart	Continue recommended actions on this sheet	Go to Termination and Follow-Up (Section 4)	

EVENT: Seepage and Erosion LEVEL: 3		ACTION DATA SHEET: C3	
RECOMMENDED ACTIONS			
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. A careful inspection of the perimeter dike and inlet/outlet piping for the dike which has observed seepage and erosion shall be performed to determine if there are any other signs of degradation, erosion, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. If necessary, confer with the Engineer Lead and the Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions per the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. If the EAP Coordinator is going to terminate EAP operations, send a qualified individual to the site to perform a follow-up inspection. 			<p>Time/Date Completed</p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event can be terminated. The event may be terminated once the perimeter dike has been repaired and the observed seepage of fluids has ceased. B. The event remains at the current Event Level. The event level shall remain at Event Level 3 as long as seepage continues and the fluids are clear, clean of suspended solids and of a relatively low flow rate. C. The event warrants escalation to Event Level 2. The Event Level shall be raised to Event Level 2 if a significant increase in the seepage flow rate is observed or a discoloration of the flow is observed. The Event Level shall also be raised if minor erosion of the dike surface is observed. <p>Based on this information, follow the appropriate actions below.</p>			
A) TERMINATION	B) EVENT LEVEL 3	C) EVENT LEVEL 2	
Go to Termination and Follow-up (Section 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Notification Chart	

EVENT: Seepage and Erosion LEVEL: 2		ACTION DATA SHEET: C2
RECOMMENDED ACTIONS		
<p><u>EAP Coordinator:</u></p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Continue to monitor the perimeter dike where the seepage and/or erosion have been observed on a daily basis and notify the Engineer Lead and the Professional Engineer if any significant changes are observed. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. <p><u>Engineer Lead:</u></p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p><u>Professional Engineer:</u></p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. Prepare to send a qualified individual to the site at the direction of the Engineer Lead. 	<p><u>Time/Date Completed</u></p>	
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 3. The event level may be downgraded when the observed rate of seepage decreases to a relatively low rate and the color of the seepage becomes clear, indicative of significantly less suspended solids. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. B. The event remains at the current Event Level. The event level shall remain at Event Level 2 until the rate of seepage decreases to a relatively low rate and the color of the seepage becomes clear, indicative of significantly less suspended solids. C. The event warrants escalation to Event Level 1. The Event Level shall be raised to Event Level 1 upon discovery of seepage flow that contains visible evidence of solids or any other indication that significant internal or external erosion is occurring. Such external erosion may be evident by the presence of a significant flow path or erosion channel on the surface of the dike. <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 3	B) EVENT LEVEL 2	C) EVENT LEVEL 1
Go to Event Level 3 Notification Chart	Continue recommended actions on this sheet	Go to Event Level 1 Notification Chart

EVENT: Seepage and Erosion		ACTION DATA SHEET: C1	
LEVEL: 1			
RECOMMENDED ACTIONS			
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. C. Contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Take all necessary actions to minimize the potential for human loss of life, injury, or property damage should the dikes fail. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. G. Establish a means to keep in frequent contact with the Engineer Lead and the Professional Engineer until Event Level 1 is terminated. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. Send a qualified individual to the site as soon as possible. B. If the EAP Coordinator is going to terminate EAP operations, perform a follow-up inspection of the failed area. 			<p><u>Time/Date Completed</u></p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 2. The event level may be downgraded once fluids cease escaping from the ponds through the Ash Pond System perimeter dikes. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade from Event Level 1 to Event Level 2. B. The event remains at the current Event Level. The event level shall remain at Event Level 1 as long as fluids are escaping from the ponds through the Ash Pond System perimeter dikes. C. The event can be terminated after a failure event occurs and the pond completely drains to a point where there is no further threat to human loss of life, injury, or property damage. <p>Based on this information, follow the appropriate actions below.</p>			
A) EVENT LEVEL 2	B) EVENT LEVEL 1	C) TERMINATED	
Go to Event Level 2 Notification Chart	Continue recommended actions on this sheet	Go to Termination and Follow-Up (Section 4)	

EVENT: Cracking and Other Movements LEVEL: 3		ACTION DATA SHEET: D3	
RECOMMENDED ACTIONS			
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. A careful and complete inspection of the entire pond shall be performed to determine if there are any other signs of degradation, erosion, or structural instability beyond those already observed. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. If the EAP Coordinator is going to terminate EAP operations, send a qualified individual to the site to perform a follow-up inspection. 			<p>Time/Date Completed</p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event can be terminated. The event may be terminated once the observed cracks or dike movements have been repaired. B. The event remains at the current Event Level. The event level shall remain at Event Level 3 until the observed cracks and/or dike movements are repaired. C. The event warrants escalation to Event Level 2. The Event Level shall be raised to Event Level 2 if a significant increase cracking (cracks greater than 1" in width) or increased movement areas are observed but there is no evidence of seepage flow through the pond perimeter dike. <p>Based on this information, follow the appropriate actions below.</p>			
A) TERMINATION		B) EVENT LEVEL 3	
Go to Termination and Follow-up (Section 4)		Continue recommended actions on this sheet	
		C) EVENT LEVEL 2	
		Go to Event Level 2 or Event Level 1 Notification Chart	

EVENT: Cracking and Other Movements LEVEL: 2		ACTION DATA SHEET: D2
RECOMMENDED ACTIONS		
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Continue to monitor the perimeter dike on a daily basis where the cracks or movements have been observed and notify the Engineer Lead and the Professional Engineer if any significant changes are observed. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. Prepare to send a qualified individual to the site at the direction of the Engineer Lead. 		<p><u>Time/Date Completed</u></p>
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 3. The event level may be downgraded when the observed cracks or dike movements are repaired. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. B. The event remains at the current Event Level. The event level shall remain at Event Level 2 until the observed cracks or dike movements are repaired. C. The event warrants escalation to Event Level 1. The Event Level shall be raised to Event Level 1 upon discovery of seepage flow through the pond perimeter dike. This may include the observation of visually evident flowing water or that the sloughed area is moist. <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 3	B) EVENT LEVEL 2	C) EVENT LEVEL 1
Go to Event Level 3 Notification Chart	Continue recommended actions on this sheet	Go to Event Level 1 Notification Chart

EVENT: Cracking and Other Movements LEVEL: 1		ACTION DATA SHEET: D1	
RECOMMENDED ACTIONS			
<p><u>EAP Coordinator:</u></p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Continue to monitor the perimeter dike where the cracks, seepage and/or erosion have been observed and notify the Engineer Lead and the Professional Engineer if any significant changes are observed. This should be done without compromising the safety of anyone performing the inspection. C. Contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Take all necessary actions to minimize the potential for human loss of life, injury, or property damage should the dike fail. F. Record all information, observations, and actions on an Event Log Form (Form 3.1). G. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. H. Establish a means to keep in frequent contact with the Engineer Lead and the Professional Engineer until Event Level 1 is terminated. <p><u>Engineer Lead:</u></p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p><u>Professional Engineer:</u></p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. Send a qualified individual to the site as soon as possible. B. If the EAP Coordinator is going to terminate EAP operations, perform a follow-up inspection of the failed area. 			<p><u>Time/Date Completed</u></p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 2. The event level may be downgraded once the flow of fluids escaping from the ponds through the Ash Pond System perimeter dikes ceases. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade from Event Level 1 to Event Level 2. B. The event remains at the current Event Level. The event level shall remain at Event Level 1 as long as fluids are escaping from the ponds through the Ash Pond System perimeter dikes. C. The event can be terminated after a failure event occurs and the pond completely drains to a point where there is no further threat to human loss of life, injury, or property damage. <p>Based on this information, follow the appropriate actions below.</p>			
A) EVENT LEVEL 2	B) EVENT LEVEL 1	C) TERMINATED	
Go to Event Level 2 Notification Chart	Continue recommended actions on this sheet	Go to Termination and Follow-Up (Section 4)	

EVENT: Discharge Piping Valve Failure or Blocked Discharge Pipes LEVEL: 3	ACTION DATA SHEET: E3	
RECOMMENDED ACTIONS		
EAP Coordinator: <ol style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Monitor the installed staff gauges to determine if the surface water level within the pond is rising or falling and at what rate. Additionally, a careful inspection of the perimeter dike and inlet/outlet piping for the pond which is at risk of overtopping shall be performed to determine if there are any other signs of degradation, erosion, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. 	<p style="text-align: right;"><u>Time/Date Completed</u></p>	
Engineer Lead: <ol style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. 		
Professional Engineer: <ol style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. If the EAP Coordinator is going to terminate EAP operations, send a qualified individual to the site to perform a follow-up inspection. 		
EVALUATION / DECISION		
Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:		
<ol style="list-style-type: none"> A. The event can be terminated. The event may be terminated when the discharge piping valve is repaired or the blocked discharge pipes are cleared. B. The event remains at the current Event Level. The event level shall remain at Event Level 3 while the discharge piping valve remains unrepaired or the blocked discharge pipes remain blocked. C. The event warrants escalation to Event Level 2. The Event Level shall be raised to Event Level 2 if the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h > 684.5$ ft • Pond 2A/2B: $h > 683.2$ ft • Pond 3: $h > 679.9$ ft 		
Based on this information, follow the appropriate actions below.		
A) TERMINATION	B) EVENT LEVEL 3	C) EVENT LEVEL 2
Go to Termination and Follow-up (Section 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Notification Chart

EVENT: Discharge Piping Valve Failure or Blocked Discharge Pipes LEVEL: 2	ACTION DATA SHEET: E2	
RECOMMENDED ACTIONS		
<p><u>EAP Coordinator:</u></p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Monitor the installed staff gauges to determine if the water surface level within the pond is rising or falling and at what rate. Perform regular inspections of all perimeter dikes and inlet/outlet piping for the subject pond at risk of overtopping to determine if there are any other signs of degradation, erosion, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. If necessary, contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Record all information, observations, and actions on an Event Log Form (Form 3.1). F. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level. G. Contact the Engineer Lead and the Professional Engineer at least daily to report the latest observations and conditions. Contact both parties immediately if observed conditions change significantly. <p><u>Engineer Lead:</u></p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p><u>Professional Engineer:</u></p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. Prepare to send a qualified individual to the site at the direction of the Engineer Lead. 	<p style="text-align: center;"><u>Time/Date Completed</u></p>	
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 3. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. The event level may be downgraded if the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h \leq 684.5$ ft • Pond 2A/2B: $h \leq 683.2$ ft • Pond 3: $h \leq 679.9$ ft B. The event remains at the current Event Level. The event level shall remain at Event Level 2 while the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $684.5 \text{ ft} < h \leq 687.5$ ft • Pond 2A/2B: $683.2 \text{ ft} < h \leq 685.5$ ft • Pond 3: $679.9 \text{ ft} < h \leq 684.5$ ft C. The event warrants escalation to Event Level 1. The Event Level shall be raised to Event Level 1 when the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h > 687.5$ ft • Pond 2A/2B: $h > 685.5$ ft • Pond 3: $h > 684.5$ ft <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 3	B) EVENT LEVEL 2	C) EVENT LEVEL 1
Go to Event Level 3 Notification Chart	Continue recommended actions on this sheet	Go to Event Level 1 Notification Chart

EVENT: Discharge Piping Valve Failure or Blocked Discharge Pipes LEVEL: 1	ACTION DATA SHEET: E1	
RECOMMENDED ACTIONS		
<p><u>EAP Coordinator:</u></p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. B. Continue to monitor the installed staff gauges to determine if the water surface level within the pond is rising or falling and at what rate. C. Contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Take all necessary actions to minimize the potential for human loss of life, injury, or property damage should the dikes overtop, erode, and fail. F. Record all information, observations, and actions on an Event Log Form (Form 3.1). G. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. H. Establish a means to keep in frequent contact with the Engineer Lead or designee until Event Level 1 is terminated. <p><u>Engineer Lead:</u></p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p><u>Professional Engineer:</u></p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. Send a qualified individual to the site as soon as possible. B. If the EAP Coordinator is going to terminate EAP operations, perform a follow-up inspection of the failed area. 	<p style="text-align: center;"><u>Time/Date Completed</u></p>	
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 2. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade from Event Level 1 to Event Level 2. The event level may be downgraded if the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h \leq 687.5$ ft • Pond 2A/2B: $h \leq 685.5$ ft • Pond 3: $h \leq 684.5$ ft B. The event remains at the current Event Level. The event level shall remain at Event Level 1 as long as the pond water surface elevation, h, is as follows: <ul style="list-style-type: none"> • Pond 1: $h > 687.5$ ft • Pond 2A/2B: $h > 685.5$ ft • Pond 3: $h > 684.5$ ft C. The event can be terminated after a failure event occurs and the pond completely drains to a point where there is no further threat to human loss of life, injury, or property damage. <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 2	B) EVENT LEVEL 1	C) TERMINATED
Go to Event Level 2 Notification Chart	Continue recommended actions on this sheet	Go to Termination and Follow-Up (Section 4)

EVENT: Sabotage LEVEL: 3		ACTION DATA SHEET: F3	
RECOMMENDED ACTIONS			
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. When notifying the Warning/Evacuation Director or designee, request additional security as appropriate. B. Immediately commence a careful inspection of all perimeter and interior dikes and inlet/outlet piping for the entire Ash Pond System to determine if there are any signs of damage, degradation, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. Record all information, observations, and actions on an Event Log Form (Form 3.1). D. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. E. At the completion of the field inspection, contact the Engineer Lead and report the latest observations and dike conditions. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Be prepared to receive and respond to the field inspection report. B. Contact the Professional Engineer and provide a summary of the emergency event including the corresponding field inspection report. C. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. If the EAP Coordinator is going to terminate EAP operations, send a qualified individual to the site to perform a follow-up inspection. 			<p>Time/Date Completed</p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event can be terminated. The event may be terminated if there is no observable damage, degradation, or structural instability, or once all observed damage, degradation, or structural instability is repaired. B. The event remains at the current Event Level. The event level shall remain at Event Level 3 until any damage, degradation, or structural instability observed during the field investigation is appropriately repaired. C. The event warrants escalation to Event Level 1. The Event Level shall be raised to Event Level 1 if the field inspection following the suspected Sabotage indicates that damage has occurred to the Ash Pond perimeter dikes and that there is visible evidence of fluid escaping through the pond perimeter dikes. <p>Based on this information, follow the appropriate actions below.</p>			
A) TERMINATION		B) EVENT LEVEL 3	C) EVENT LEVEL 1
Go to Termination and Follow-up (Section 4)		Continue recommended actions on this sheet	Go to Event Level 1 Notification Chart

EVENT: Sabotage LEVEL: 2	ACTION DATA SHEET: F2	
RECOMMENDED ACTIONS		
<p><u>EAP Coordinator:</u></p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. When notifying the Warning/Evacuation Director or designee, request additional security as appropriate. B. Immediately commence a careful inspection of all perimeter and interior dikes and inlet/outlet piping for the entire Ash Pond System to determine if there are any signs of damage, degradation, or structural instability. This should be done without compromising the safety of anyone performing the inspection. C. Record all information, observations, and actions on an Event Log Form (Form 3.1). D. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level. E. At the completion of the field inspection, contact the Engineer Lead and report the observations and dike conditions. <p><u>Engineer Lead:</u></p> <ul style="list-style-type: none"> A. Be prepared to receive and respond to the field inspection report. B. Contact the Professional Engineer and provide a summary of the emergency event including the corresponding field inspection report. C. Coordinate next steps with the Professional Engineer, including any remediation work. <p><u>Professional Engineer:</u></p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. B. Prepare to send a qualified individual to the site at the direction of the Engineer Lead. 	<p><u>Time/Date Completed</u></p>	
EVALUATION / DECISION		
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 3. The event level may be downgraded if there is no observable damage, degradation, or structural instability, or once all observed damage, degradation, or structural instability is repaired. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. B. The event remains at the current Event Level. The event level shall remain at Event Level 2 until the observed damage, degradation or structural instability has been addressed and/or repaired. C. The event warrants escalation to Event Level 1. The Event Level shall be raised to Event Level 1 if the field inspection following the confirmed Sabotage indicates that damage has occurred to the Ash Pond perimeter dikes and that there is visible evidence of fluid escaping through the pond perimeter dikes. <p>Based on this information, follow the appropriate actions below.</p>		
A) EVENT LEVEL 3	B) EVENT LEVEL 2	C) EVENT LEVEL 1
Go to Event Level 3 Notification Chart	Continue recommended actions on this sheet	Go to Event Level 1 Notification Chart

EVENT: Sabotage LEVEL: 1		ACTION DATA SHEET: F1	
RECOMMENDED ACTIONS			
<p>EAP Coordinator:</p> <ul style="list-style-type: none"> A. Make sure notifications to all parties are completed in accordance with the outline included in Section 2.2. When notifying the Warning/Evacuation Director or designee, request additional security as appropriate. B. Continue to monitor the damaged dike of the Ash Pond System and notify the Engineer Lead and the Professional Engineer if any significant changes are observed. This should be done without compromising the safety of anyone performing the inspection. C. Contact local emergency contractors and/or other individuals that may be able to assist in monitoring or repairing the situation. D. Confer with the Engineer Lead and Professional Engineer to determine corrective/preventative actions that must be taken. E. Take all necessary actions to minimize the potential for human loss of life, injury, or property damage should the dikes fail. F. Record all information, observations, and actions on an Event Log Form (Form 3.1). G. Evaluate conditions in accordance with the Evaluation/Decision table below at least daily or whenever conditions change significantly. If appropriate, adjust the event level or terminate EAP operations. H. Establish a means to keep in frequent contact with the Engineer Lead and the Professional Engineer until Event Level 1 is terminated. <p>Engineer Lead:</p> <ul style="list-style-type: none"> A. Contact the Professional Engineer and provide a summary of the emergency event including the corresponding field inspection report. B. Coordinate next steps with the Professional Engineer, including any remediation work. <p>Professional Engineer:</p> <ul style="list-style-type: none"> A. Provide decision support and technical support to the EAP Coordinator and the Engineer Lead. Send a qualified individual to the site as soon as possible. B. If the EAP Coordinator is going to terminate EAP operations, perform a follow-up inspection of the failed area. 			<p>Time/Date Completed</p>
EVALUATION / DECISION			
<p>Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.1 and/or Table 3.1, determine whether:</p> <ul style="list-style-type: none"> A. The event warrants downgrade to Event Level 2. The event level may be downgraded once the flow of fluids escaping from the ponds through the perimeter dike ceases. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade from Event Level 1 to Event Level 2. B. The event remains at the current Event Level. The event level shall remain at Event Level 1 as long as fluids are escaping from the ponds through the perimeter dike. C. The event can be terminated after a failure event occurs and the pond completely drains to a point where there is no further threat to human loss of life, injury, or property damage. <p>Based on this information, follow the appropriate actions below.</p>			
A) EVENT LEVEL 2	B) EVENT LEVEL 1	C) TERMINATED	
Go to Event Level 2 Notification Chart	Continue recommended actions on this sheet	Go to Termination and Follow-Up (Section 4)	

3.2 LOCALLY AVAILABLE EQUIPMENT, LABOR, AND MATERIALS

The following is a list of the addresses and phone number(s) of nearby companies (e.g.; pump and other heavy equipment rental, crane service, etc.) that may be needed and are available and willing to provide services in the case of an emergency event. Since Ash Pond System emergencies may not just occur during business hours, these companies have a 24-hour contact number and they are specifically notified that they may be contacted at any time when an emergency is noted. All companies have agreed in writing to this condition and have provided a 24-hour contact number that is included in this EAP.

The contractors listed below have been retained by Harding Street Generating Station to provide the equipment, labor and materials deemed necessary to respond to emergency situations that may develop at the Ash Pond System of the Harding Street Generating Station.

SET Environmental

Primary Contact: Jennifer Holbrook
Contact Telephone Number: (317)-831-3394
24-Hour Telephone Number (National): (877)-437-7455

SET Environmental can provide the following services in the case of an emergency event:

- Initial response,
- Excavation,
- Remediation,
- Disposal, and
- Hazardous Waste Operations and Emergency Response (HAZWOPER).

Denney Excavating

Primary Contact: Subcontractor for SET Environmental
24-Hour Telephone Number: (317)-423-0738

Denney Excavating can provide the following services in the case of an emergency event:

- Excavation,
- Transportation, and
- HAZWOPER.

Sub Surface of Indiana

Primary Contact: Todd Larson
Contact Telephone Number: (812)-579-4195
24-Hour Telephone Number: (317)-691-5194

3.3 INCIDENT OR EMERGENCY EVENT LOG

Use the Incident or Emergency Event Log (Form 3.1) on the next page to record actions and events during an Incident or Emergency Event and the time that the action or event occurred.

SECTION 4. TERMINATION AND FOLLOW-UP

Once EAP operations have begun under Event Level 3, 2, or 1, the EAP operations must eventually be terminated and follow-up procedures completed. As shown on Figure i, EAP operations can only be terminated after completing operations under Event Level 3 or 1. If an Event Level 2 is declared, the operations must be designated Event Level 3 or 1 before terminating the EAP operations.

4.1 TERMINATION RESPONSIBILITIES

EAP operations will be terminated by the EAP Coordinator (or designee) after it is agreed that the operations for an Event Level 1 or 3 have been completed. Termination must include written approval of the Professional Engineer. Additionally, a report must be prepared to document the analysis of the problem causing the need for the implementation of the EAP and the details of all actions taken to remediate the situation that resulted in the implementation of the EAP.

In the case of Event Level 1, termination must include the specific actions taken to ensure the safety of people and property downstream. Do not terminate the EAP unless it is certain that there is no further threat.

4.2 FOLLOW-UP

Follow-up activities will be implemented to achieve the following general objectives:

Event Level 3

Describe the EAP review process following the termination of a Level 3 event. Ensure that all parties that participated in the EAP activities are involved in the review process. This review is to be completed within 90 days of termination. During the review, document any EAP procedures that were followed effectively, as well as any ways that the EAP could be improved. Insert this document into Appendix B of the EAP.

Event Level 2 or 1

Describe the EAP review process following the termination of a Level 2 or 1 event. Ensure that all parties that participated in the EAP activities are involved in the review process. This review is to be completed within 180 days of completion of termination unless special circumstances require additional time for analysis and review. During the review, document any EAP procedures that were followed effectively, as well as any ways that the EAP could be improved. Insert this document into Appendix B of the EAP. In addition, note any extra measures that were taken due to the increased severity of the event.

SECTION 5. MAPS, FIGURES, AND SUPPORTING DATA

Copies of the following maps and figures are provided in this EAP for use in training personnel and during EAP operations.

- Figure 5.1 - Location and Vicinity Map
- Figure 5.2 - Ash Pond System Layout Annotated Aerial Photograph
- Figure 5.3 - Emergency Site Access Route Map
- Figure 5.4 - Estimated Dike Breach Inundation Map
- Figure 5.5 - Ash Pond System Area and Capacity Curves

SECTION 6. EMERGENCY PREPAREDNESS

This section of the EAP describes the activities and actions taken by Harding Street Generating Station and EAP personnel that prepares them to appropriately execute the actions described herein during an emergency event. This section also outlines this EAP's training and exercise provisions, which will ensure that EAP personnel remain familiar with the EAP and that the EAP will be effective should an emergency event arise.

6.1 SURVEILLANCE AND MONITORING

Specifications and provisions for the active surveillance and monitoring procedures for the Harding Street Generating Station's Ash Pond System are contained within the facility's Operation and Maintenance Plan (O&M Plan). The following surveillance and monitoring activities are prescribed by the O&M Plan:

- *Staff Gauge Monitoring* – Four staff gauges around the Ash Pond System are used to monitor the level of the water in each of the ash ponds, which, when compared to the appropriate surface water elevation in Table 1.2, is used to determine the potential of a flooding or overtopping event. The water level in each ash pond is recorded monthly.
- *Piezometer Monitoring* – Three piezometers around the Ash Pond System are used to monitor the elevation of the water inside the ash ponds' dikes so as to detect any changes in the operation of each ash pond that might lead to an emergency event. The water level in the piezometers is recorded monthly.
- *Weekly and Informal Inspections* – Weekly inspections are performed at least once every seven days by facility personnel familiar with the Ash Pond System and who can make accurate assessments of the ash ponds' conditions. Additional informal inspections are performed after a significant rain event/weather condition. These inspections evaluate the conditions of the ash ponds and their discharge structures.
- *Annual Inspections* – Annual inspections are performed at least once a year by an independent, qualified professional engineer licensed in the State of Indiana. This inspection ensures that the facility's ash ponds are operated and maintained in accordance with recognized and generally accepted engineering standards.

6.2 ACCESS TO THE SITE

The primary route for accessing Harding Street Generating Station during an emergency event is via Harding Street. Figure 5.3 shows the routes to the Ash Pond System from the facility's entrance upon the arrival of EAP personnel and emergency responders.

6.3 RESPONSE DURING PERIODS OF DARKNESS

Should an emergency event be detected during periods of darkness, the Plant Manager or his/her designee will ensure that the area(s) where the emergency event was detected is illuminated using available on-site equipment (e.g., portable lights). Adequate illumination should also be provided in facility areas ancillary to monitoring, remediating, and responding to the emergency event. If necessary, other EAP personnel should provide equipment capable of illuminating the previously-mentioned areas.

6.4 RESPONSE DURING WEEKENDS AND HOLIDAYS

The emergency response and notification procedures described herein will be as unaltered as is practical during an emergency event that is detected during a weekend or on a holiday. Therefore, it is important that the contact information for the EAP personnel listed in Figures 2.1, 2.2, and 2.3 be current, accurate, and include a means of contacting each person or agency, or designated alternates for each, during these times. Accuracy of such information will be verified during the Annual EAP Participation Meeting (see Section 6.6.3).

6.5 RESPONSE DURING ADVERSE WEATHER

If an emergency event is detected during adverse weather conditions, the Plant Manager or his/her designee will ensure clear and safe access is provided for EAP personnel to implement emergency response actions. This could include the use of on-site equipment such as snow plows, salt, and sand. The Plant Manager or his/her designee will routinely contact the National Weather Service so as to adequately update EAP personnel about the progression or regression of the adverse weather. Section 6.6.4 lists adverse weather conditions for which EAP personnel will develop, if necessary, special provisions for implementing emergency response actions in such conditions.

6.6 EAP REVIEW, TRAINING, AND EXERCISE

The following subsections provide provisions for ensuring the effectiveness of the EAP in responding to and remedying an emergency event through periodic reviews, training, meetings, and exercises.

6.6.1 EAP Review and Revision

The annual review of the EAP for evaluation of consistency with plant operations and available resources will be conducted by the EAP Coordinator and reviewed by the Engineer Lead. All changes noted will be made to the EAP as required and any needed training will be provided. Note that an EAP Annual Review Verification Statement shall be completed upon conclusion of the review.

The EAP Coordinator will be responsible for ensuring that the EAP documents are revised. After changes are made, a new EAP with updated information will be sent to all holders with clear and prominent instructions to destroy the outdated copy in their files. The new EAP will be certified by a professional engineer registered in the State of Indiana in accordance with 40 CFR 257.73(a)(3)(iv). At least once annually, the EAP Coordinator will perform an audit of the EAP copies to ensure that all principal members of the organization have the correct copies in their possession.

6.6.2 EAP Training

All EAP personnel and, as necessary, other local emergency responders will be trained in the provisions of this plan such that they are familiar with all aspects of the plan. The purpose of this training is to ensure that each person involved in the implementation of the EAP is thoroughly familiar with his/her responsibilities and duties under the plan.

The Internal EAP organization will meet once annually to refresh themselves on the content of the EAP and to review the conduct of all EAP events that may have occurred. In the event that an Event Level 1 occurs, the internal EAP organization will meet immediately after the termination of the event to assess important aspects of this event and make all changes necessary to prevent this from future occurrence.

6.6.3 Annual EAP Participation Meeting / Exercises

At least once every 12 months, EAP personnel and local emergency responders involved in the implementation of the EAP will meet at the Harding Street Generating Station. This meeting will be conducted by the EAP Coordinator, or his/her designee, and will cover the following topics at a minimum:

- Summary of EAP process,
- Potential emergency events at the Ash Pond System,
- Notification flowcharts and emergency response actions,
- Training and exercises, and
- Updates to EAP personnel contact information.

Form D.2 in Appendix D may be used to document the occurrence of the annual meeting between EAP personnel and local emergency responders.

In order to promote prevention, preparedness, and response to an emergency event at the Ash Pond System, EAP personnel and local emergency responders will participate in exercises of the EAP. These exercises will further familiarize EAP participants with the plans, policies, and procedures for an emergency event, as well as validate them.

These exercises may occur during the Annual EAP Participation Meeting and will primarily feature discussions on the EAP's provisions and simulated scenarios to assess the established plans, policies, and procedures. Parts of these discussions should focus on special provisions that are necessary for responding to emergency events in adverse weather conditions such as flooding, wind, ice, snow, severe thunderstorms, and tornados.

APPENDIX A

Warning and Evacuation

This appendix is available for inserting local warning and evacuation plans developed by the Warning/Evacuation Director or designee.

APPENDIX B

Inundation Map Documentation

APPENDIX B

Inundation Map Documentation

The estimated flood inundation extent that could occur as a result of a dike breach at the Harding Street Generating Station Ash Pond System is presented on Figure 5.4 – Estimated Dike Breach Inundation Map. The Inundation Map is based on the results of a hypothetical dike breach analysis / inundation study originally conducted in 2016 and includes flood wave traveling information including peak arrival time, maximum water elevation, incremental rise, peak dam breach flow, time to peak, and inundation duration for various locations on the map. The transparent orange and blue colored areas shown on Figure 5.4 represent the estimated maximum flood inundation extent. The areas of the map highlighted in transparent orange color represent an Immediate Impact Area and include Lick Creek and other low-lying areas of the generating station adjacent to Lick Creek. The Immediate Impact Area has a very short flood wave arrival time (< 5 minutes) and the peak incremental water level rise can be significant; therefore, it is imperative that this area receive, if at all possible, preemptive warning of a potential dike breach should an incident or emergency event ever occur. The Dike Breach Inundation Areas represented by the transparent blue color are located further downstream from the Ash Pond System and are principally contained within natural water channels. Although, the water level is expected to temporarily rise as a result of a dike failure at the Ash Pond System, the peak incremental rise and flood wave arrival time are less critical. The flood wave arrival time is expected to be less than 30 minutes at the Interstate 465 Bridge over the White River, which is approximately 2 miles downstream of the Ash Pond System.

As part of the 2021 hazard potential classification assessment for the Harding Street Generating Station Ash Pond System, the 2016 inundation study was reviewed to determine if any changes have occurred that necessitate updating the study. Per the 2021 assessment, there have been no significant modifications to Ponds 1, 2A/2B, and 3 (mass excavations, major embankment modifications, etc.); no significant modifications to the topography adjacent to the CCR surface impoundments; and no significant residential, commercial, or industrial developments that have been constructed in the areas downstream of the CCR surface impoundments that would be impacted by a hypothetical dike breach since 2016. One input to the 2016 study that has changed is the operational status of each CCR surface impoundment. In October 2020, AES Indiana initiated closure of Ponds 1, 2A/2B, and 3 and, therefore, no longer uses the Harding Street Generating Station Ash Pond System to manage any of the station's wastestreams or indirect stormwater flows. In addition, Ponds 1 and 2A/2B have been dry (*i.e.*, no significant water level has been observed in the ponds) and the water level in Pond 3 has been less than 8-feet deep since at least the 2018 annual inspection performed in accordance with 40 CFR 257.83(b). However, the 2016 inundation study conservatively assumed that Ponds 1, 2A/2B, and 3 were completely full with water at the time of the hypothetical dike breaches considered. As a result of these observations, the inundation map derived from the 2016 inundation study that is presented in Figure 5.4 remains valid for use in this EAP.

Per the inundation study, the maximum flood extent that could occur as a result of a dike breach at the Ash Pond System was determined to be always within the USGS flood inundation map boundary as determined from the USGS Scientific Investigation Report 2015-5051. In other words, flooding that may be caused by a dike breach is expected to remain within the river's flood plain and will not overtop the river's levee system already in place. This study also determined that no residential areas and critical infrastructure are located within the inundation area between the Ash Pond system and the Interstate 465 Bridge over the White River.

Detailed back-up calculations that were used to develop the inundation map, including all assumptions, references, and supporting documents, can be reviewed upon request.

Basis and Assumptions

- 1) A two-dimensional hydrodynamic model (ADCIRC) was used to compute the maximum dike breach flood extent.
- 2) Dike breach scenarios were developed using pond geometry information, dike slope stability analysis, and soil boring data.
- 3) Since Former Ponds 2, 4, 4A, and 4B were regraded in the fall of 2015 such that they no longer impound water, they are not included in the dike breach scenarios.
- 4) Cascading failure scenarios were developed based on engineering judgment, considering a combination of physically possible and realistic dike failure modes (i.e., hydrologic and non-hydrologic) of each active pond. Conservatively, a scenario considering simultaneous failure of all active ponds was also evaluated.
- 5) Wet ash inside the pond is conservatively considered as an equivalent volume of water.
- 6) Final inundation map was developed enveloping the flooding extents from the hydraulic analyses for the dike breach scenarios.

APPENDIX C

Past EAP Activity

This appendix is the placeholder for copies of past EAP activity reports, Annual Review Verification Statements that must be completed after the annual review is performed, and Periodic Test Memos to be included after periodic tests have been performed.

APPENDIX D

EAP Forms

FORM D.1

Ash Pond System – EAP Annual Review Verification Statement

Name of Dike: Harding Street Generating Station - Ash Pond System

Date of Drill: _____

- A. The current EAP is on hand and all revisions have been inserted.
- B. The readiness evaluated in the drill was acceptable.
- C. The communications network is correct and was verified.
- D. The training of personnel is sufficient and acceptable.
- E. The EAP Annual Review procedures were followed.

Additional Comments: _____

(individual responsible for
conducting EAP Annual Review)

Date

(printed name)

(EAP Coordinator)

Date

(printed name)

FORM D.2

Ash Pond System – Annual EAP Participant Meeting Log
(Page 2 of 2)

Name of Dike: Harding Street Generating Station - Ash Pond System

Date of Meeting: _____

In accordance with 40 CFR 257.73(a)(i)(3)(E), the annual meeting between AESI's internal EAP organization and local emergency responders took place at the Harding Street Generating Station on the preceding date. The following topics were discussed:

ANNUAL EAP PARTICIPANT MEETING NOTES

APPENDIX E

EAP Distribution

APPENDIX E
 EAP Distribution

Name	Title	Telephone No.	Email Address	EAP Copy No.
Jordan Mann	EAP Coordinator	<i>Contact information for emergency action personnel is on file with the appropriate station personnel.</i>		1
Michael Harrell	EAP Engineer Lead			2
Mark Ortiz	Alternate EAP Engineer Lead			3
Tanya Sovinski	EAP External Affairs Manager			4
Jeff Larmore	EAP Warning/Evacuation Director			5
Jacob Spence	Alternate EAP Warning/Evacuation Director			6
Dave Nielson	EAP Professional Engineer			7
Paula Guletsky	Alternate EAP Professional Engineer			8
Greg Ellis	AESI Harding Street Generating Station Plant Manager			9
Angelique Collier	EAP Environmental Affairs Director			10
Pilar Cuadra	Alternate EAP Environmental Affairs Director			11

APPENDIX F

Location of Supplementary Information

This appendix contains background information and pertinent data, and is also the place holder for any other key supplementary information such as emergency materials, service contracts, and any other relevant material for Harding Street Ash Pond System and other similar information that may be placed in this appendix by individual plan holders for quick reference during an event.

APPENDIX G

Glossary

APPENDIX G

Glossary

Abutment: The undisturbed natural material of the valley side against which a dike is constructed. The left and right abutments are defined as being on the right and left side of an observer looking downstream.

Appurtenant structure: A structure necessary for the operation of a dike, such as outlets, trash racks, valves, spillways, power plants, tunnels, etc.

Breach: An eroded opening through a dike that drains the reservoir. A controlled breach is a constructed opening. An uncontrolled breach is an unintentional opening that allows uncontrolled discharge from the reservoir.

Channel: A general term for any natural or artificial watercourse.

Conduit: A closed channel to convey water through, around, or under a dike.

Crest of Dike: Top of dike.

Cross section: A sectional view of a dike formed by passing a plane through the dike perpendicular to the axis.

Dike: A structure constructed of earth or coal combustion residual (CCR) materials intended to retain fluid and solid materials as part of CCR processing operations for the Harding Street Generating Station.

Dike failure: The uncontrolled release of reservoir contents.

Drain, toe: A system of pipes and/or pervious material along the downstream toe of a dike used to collect seepage from the foundation and embankment and convey it to a free outlet.

Drainage area: The area that drains to a particular point of a river or stream.

Drawdown: The difference between a water level and a lower water level in a reservoir within a particular time. Used as a verb, it is the lowering of the water surface due to release of water from the reservoir.

EAP Operations: All actions taken by Harding Street Generating Station and other involved parties to address an incident or emergency event.

Earthquake: A sudden motion or trembling in the earth caused by the abrupt release of accumulated stress along a fault.

Emergency Action Plan (EAP): A comprehensive, single-source document providing accurate and current instructions intended to help Harding Street Generating Station and AESI save lives, minimize property damage, and minimize environmental impacts caused by large releases from a dike failure at the Harding Street Ash Pond System, or other events that present hazardous conditions.

Emergency Event: An event which takes place or a condition which develops that is of a serious nature that may endanger the dike, or endanger persons or property, and demands immediate attention.

Flood: A temporary rise in water levels resulting in inundation of areas not normally covered by water; may be expressed in terms of probability of exceedance per year such as one percent chance flood or expressed as a fraction of the probable maximum flood of other reference flood.

Some related terms are:

- a. Flood, Inflow Design (IDF): That flood used in the design of a safe dike and its appurtenant works particularly for sizing the spillway and outlet works, and for determining maximum temporary storage and height of dike requirements.
- b. Flood, Probable Maximum (PMF): The largest flood reasonably expected at a point on a stream because of a probable maximum storm and favorable runoff conditions.

Freeboard: Vertical distance between a stated water level and the top of dike.

Height, maximum hydraulic: The vertical distance between the maximum design water level and the lowest point in the original streambed.

Height, structural: The vertical distance between the lowest point on the dike crest and the lowest point of the excavated foundation.

Hydrograph, breach or dike failure: A flood hydrograph resulting from a dike breach.

Hydrograph, flood: A graphical representation of the flood discharge with respect to time for a particular point on a stream or river.

Hydrograph, unit: A hydrograph with a volume of one inch of runoff resulting from a storm of a specified duration and aerial distribution. Hydrographs from other storms of the same duration and distribution are assumed to have the same time base but with ordinates of flow in proportion to the runoff volumes.

Incident: An unusual event which takes place, or a condition which is slowly developing, that is not normally encountered in the routine operation of the Ash Pond System, or necessitates a variation from the operating procedures. Such events are more common than emergency conditions and often offer time to conduct preplanned responses to the slowly developing situation. If addressed in a timely manner, such events can often be prevented from progressing into a much worse event.

Incident Command System (ICS): A management system designed to control personnel, equipment, supplies, and communications at the scene of an unusual or emergency event. An Incident Command System is typically deployed at the beginning of an event until the management of the on-scene operations are no longer needed. The structure of the Incident Command System can be expanded or contracted depending on the changing needs of the event. The Incident Command System allows all involved parties to effectively communicate using common terminology.

Instrumentation: An arrangement of devices installed into or near dikes (piezometer and staff gauge at the Harding Street Ash Pond System) that provide measurements that can be used to evaluate performance parameters of a structure.

Inundation map: A map delineating the area that would be submerged by a particular flood event.

Length of dike: The length along the top of the dike between contact abutments. This also includes the spillway, power plants, navigation lock, fish pass, etc., where these form part of the length of the dike. If detached from the dike, these structures should not be included.

Outlet: An opening through which water can be discharged.

Phreatic surface: The free surface of water seeping at atmospheric pressure through soil or rock.

Piezometer: An instrument for measuring water or pressure head.

Piping: The progressive development of internal erosion by seepage appearing downstream as a hole or seam discharging water containing soil particles.

Probability: The likelihood of an event occurring within a given period of time.

Probable Maximum Precipitation (PMP): Theoretically, the greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographical location.

Reservoir: A body of water impounded by a dike in which water can be stored.

Reservoir surface area: The area covered by a reservoir when filled to a specified level.

Riprap: A layer of stone, precast blocks, bags of cement or other suitable material, generally placed on the upstream slopes of an embankment or along a watercourse as protection against wave action, erosion, or scour. It consists of pieces of relatively large size as distinguished from a gravel blanket.

Seepage: Flow or movement of water through a dike, its foundation, or its abutments.

Slope: Inclination from the horizontal, measured as the ratio of horizontal units to corresponding vertical units.

Spillway: A structure over or through which flow is discharged from a reservoir. If the rate of flow is controlled by mechanical means such as gates, it is considered a controlled spillway. If the elevation of the spillway crest is the only control, it is considered an uncontrolled spillway.

Spillway channel: An open channel or closed conduit conveying water from the spillway inlet downstream.

Spillway crest: The lowest level at which water can flow over or through the spillway.

Spillway, chute: An inclined channel, usually separate from the dike, to convey reservoir overflow into the natural channel below the dike or into an adjacent natural drainage channel.

Storage: The retention of water or delay of runoff either by planned operation, as in a reservoir, or by temporary filling of overflow areas, as in the progression of a flood wave through a natural stream channel. Definitions of specific types of storage in reservoirs are:

- a. Dead Storage: The reservoir volume between the invert of the lowest discharge and the reservoir bottom.
- b. Active Storage: The reservoir volume between the normal reservoir water surface elevation and the invert of the lowest discharge.
- c. Flood Storage: The reservoir volume between the crest of the dike and the normal reservoir water surface elevation.