

Falcon Development, LLC

Big Brown Steam Electric Station

City of Fairfield, Freestone County, Texas

Emergency Action Plan

CCR Units

Ash Disposal Area & Bottom Ash Pond

Texas Commission on Environmental Quality

Permit - 39099

Solid Waste Registration - 30080

Task

The Emergency Action Plan (EAP) intends to provide information and response procedures on potential emergency situations that may occur at Big Brown Steam Electric Station (BBSSES) with regard to the Coal Combustion Residual (CCR) Impoundments.

This Plan consists of guidelines and procedures to be followed in the event of an emergency. The primary focus is to ensure the safety and wellbeing of employees, contractors, and the public then respond to the emergency appropriately according to the guidelines within this document and as outlined by the emergency conditions.

The information provided in this document is not absolute, the EAP identifies potential occurrences that may endanger the public or the environment and outlines the steps that will be taken by BBSSES to reduce these hazards. It is important that all employees and contractors are familiar with the information provided and that they understand that they have a responsibility and duty of care to themselves, their fellow workers, subcontractors, the public and the environment.

If an emergency occurs, employees and contractors will be required to assist in implementing the emergency response procedures as applicable.

Purpose

The purpose of this document is to;

- Promptly provide appropriate attention to an emergency;
- Put in place response procedures to potential emergencies;
- Reduce the number of injuries and/or illnesses;
- Ensure compliance with regulations;
- Make safe any area or equipment involved in an emergency;
- Record and report information so that the necessary people are notified and proper records are kept;
- Confirm that only factual information about the incident is collected and disseminated; and
- Investigate, analyze, and follow up on the emergency to improve response.

Principles

The EAP will apply to emergencies that may occur on the site. Effective implementation of this EAP requires support from all levels of management. The EAP will be communicated to all facility employees and contractors and will be reinforced at regular safety meetings as well as annual meetings between the facility owners and local emergency services as required by law. The EAP will be updated at an as needed basis, when required by law, or to maintain compliance with local, state, and federal regulations.

Site Information

BBSSES was constructed by Luminant, previously Texas Utilities, and went into operation in 1971. The site is located at 8850 FM 2570 Fairfield, TX 75840 near Fairfield Lake State Park in Freestone County, Texas. BBSSES was a two-unit, 1,187 MW, coal fired power plant and has 2 ash disposal areas, Ash Disposal Area (ADA) II and the North and South Bottom Ash Ponds (BAPs), regulated under federal CCR Rule. ADA II is roughly 1-mile NE of the main facility and has 11 clay-lined cell and is approximately 320 acres. The North and South BAPs were built in the 1960's but were relined in the 1980's with 3-foot clay liners, are roughly ½ mile West of the main facility, and are approximately 18 acres total. The site has 15 total groundwater monitoring wells located upgradient and downgradient of ADA II and the BAPs. In 2017 Luminant announced plans for closure of BBSSES due to economic factors and was effectively retired in 2018.

Hazard Classification

ADA II is considered an existing CCR landfill under the CCR Rule and a Class II landfill, as outlined by the Texas Commission on Environmental Quality (TCEQ), and currently act as holding areas for bottom ash, fly ash, and related wastes from BBSSES. The BAPs contain bottom ash, boiler slag, metal cleaning wastes, and water treatment wastes (Class I, II, and III wastes) and the ponds previously acted as surge basins for various water streams and occasionally receiving non-hazardous wastes from other facilities. ADA II and the BAPs may continue to receive Class III non-hazardous waste to achieve necessary grading for capping as described in the Closure Plan. The landfills are subject to monitoring requirement set forth in the permit issues by the TCEQ; TCEQ Solid Waste Permit No. 39099.

Impoundment Descriptions

ADA II was constructed partially above and below grade and is surrounded by earthen dikes that extend approximately 10 to 15 feet above the surrounding grade. The dikes were constructed using local materials and have a vegetative covering. ADA II has a total of 11 cells with a 3-foot thick compacted clay liner; cells 1, 2, 3, and 8 have been partially capped with temporary soil caps, cells 4 through 7 have been permanently clay capped, cells 9 and 10 have not been capped, and cell 11 has never contained CCR and is being used for water management.

BAP North and South were constructed partially above and below grade and is surrounded by, as well as divided by, earthen dikes that extend approximately 14 to 21 feet above grade. The exterior dikes were constructed using local materials and have a vegetative covering. Each BAP is approximately 1,400 feet long by 250 feet wide and have a 3-foot thick clay liner. On the West end of the BAPs, a 30-inch diameter subsurface pipe exits the North BAP (NBAP) and a 42-inch water pipe exits the South BAP (SBAP).

General Notification Information

The person discovering the potential emergency shall first notify the Site Safety Manager, who will immediately assume responsibility for managing the overall response, will enact the proper course of action (COA) outlined in the EAP based on the emergency condition. The Site Safety Manager will make the initial response to emergency personnel if necessary.

The local Emergency Management Agency (EMA) and local emergency services will be provided with a copy of the EAP. The EAP will also be posted on the CCR Compliance Website in accordance with (IAW) state and federal regulations. BBSES and the local EMA will notify nearby establishment if deemed necessary.

Emergency Response

BBSES personnel continuously monitor embankment conditions. The Site Safety Manager shall determine what immediate corrective action should be taken, how repairs should be accomplished, and if gradual or emergency response is necessary. The Site Safety Manager has full authority to commit the resources of BBSES to respond to any emergency.

Corrective actions will be coordinated and communicated with the local EMA. If asked, assist local authorities in contacting the residents and businesses. The Site Safety Manager and contractors would work cooperatively with the staffs of those agencies to respond to and implement corrective actions. These state and local agencies may also feel it necessary to contact other appropriate state and/or local agencies and organizations during the emergency.

If emergency dewatering of the impoundments is deemed necessary, then dewatering should be accomplished by utilizing the station mobile pump systems to remove water from the impoundment and route it through a secondary cell.

Overall responsibility for responding to a failure rests with the Site Safety Manager or appointed designee (Site Engineer). The Site Safety Manager has complete authority on response to an emergency, allocation of resources, and implementation of corrective actions or preventative maintenance.

Communications and Access

The communications methods for each individual contact will not change regardless of the timing of the emergency. Access to the site will be controlled by the Site Safety Manager during an emergency. Certain areas around the pond are secure for station security purposes and will remain secure to the extent possible without neglecting the safety and stability of the embankments. There are multiple access points around the site which should provide adequate access to a failure or potential failure location, during all types of weather conditions.

Emergency Conditions

Three types of emergency conditions, in regards to CCR impoundments, have been considered in this plan; Condition A: failure of the embankments is imminent or has occurred, Condition B: a potential failure situation is developing, and Condition C: a non-failure emergency.

For a Condition A emergency immediate contact with the emergency authorities is essential, for a Condition B or Condition C there may be time to take remedial or corrective actions to reduce the impact of a potential failure.

Condition A emergency: the local EMA and BBSES personnel will work together to notify the necessary contacts including the local landowners, industrial or commercial entities, engineers and contractors, and parks services.

Condition B emergency: BBSES personnel will commence the notification procedure, notifications will be limited to BBSES contacts and the local EMA.

Condition C emergency: no notification will be made to the emergency authorities and the Site Safety Manager will advise corrective action and increased observations of the embankments.

Seismic Emergency

The BBSES site is in a low seismic zone due to its distance from any faults. In the event of a seismic anomaly facility personnel will notify the Site Safety Manager even if there are no visual indications of a problem. The site should remain at emergency **Condition C** until inspected by a Professional Engineer to ensure the integrity of the impoundments.

We, the undersigned, this date acknowledge this plan as a part of the emergency operation procedures that would be taken to protect life and reduce property damage in case of an emergency due to failure of any of the embankments of the BBSSES Impoundments.



Jesse Froh – Site Safety Manager

10/21/2020

Date



11/4/20

Date

We, the undersigned, this date acknowledge this plan as a part of the emergency operation procedures that would be taken to protect life and reduce property damage in case of an emergency due to failure of any of the embankments of the BBSES Impoundments.



Jesse Froh – Site Safety Manager

10/21/2020

Date



Linda Grant
Freestone Co. Judge

10-27-20

Date

Suggested Surveillance Action	Water Level Increase
When the water level in the Wood River East Ash Impoundment is less than or equal to the noted elevation, only normal surveillance as called for in the Operation and Maintenance Plan need be performed. There is no emergency condition.	< 3 inches
During and immediately following unusual storm and flood events, which causes the water level in the impoundment to increase, BBSES personnel will make visual inspections of the impoundment and its appurtenances at 1-hour intervals <u>if it is presently raining</u> and at 12-hour intervals if it is <u>not</u> currently raining. This is a Condition C situation.	>= 3 inches
When the BBSES Impoundment water level reaches the noted elevation, the pond and its appurtenances will be inspected at 1-hour intervals <u>if it is presently raining</u> and at 8-hour intervals if it is <u>not</u> presently raining. This is a Condition C situation.	>= 6 inches
When the BBSES Impoundment water level reaches the noted elevation, and <u>it is currently raining</u> , The Site Safety Manager will notify the County EMA offices that a Condition B condition exists at the BBSES Impoundment. The impoundment and its appurtenances will be inspected continuously <u>if it is presently raining</u> and at 4-hour intervals if it is <u>not</u> presently raining. The downstream face of the dam will be continuously monitored for erosion and/or failure.	>= 12 inches
When the BBSES Impoundment water level reaches the noted elevation, and <u>it is currently raining</u> , Site Safety Manager will notify the County EMA offices that a Condition A condition exists at the BBSES Impoundment. The impoundment and its appurtenances will be monitored continuously until <u>the rain has stopped</u> and the water level falls 2 feet of elevation and the emergency condition has been changed to Condition B or Condition C . The downstream face of the dam will continue to be monitored for erosion and imminent failure.	>= 24 inches
<p>When the BBSES Impoundment water level reaches the noted elevation and <u>it is currently raining</u>, or if water is flowing over any portion of any perimeter embankment, a notice to evacuate all residential, commercial, and industrial occupants in the flood inundation area shall be issued. All occupants within the breach wave area are to be evacuated. The impoundment and its appurtenances will be monitored continuously until pond water levels fall 2.25 feet below the noted elevations (i.e. to normal levels) and <u>the rain has stopped</u>. This continues to be a Condition A situation.</p> <p>Occupants of evacuated areas are not to return to the flood wave area until:</p> <ol style="list-style-type: none"> (1) Water levels fall to normal elevation, and (2) The pond and its appurtenances have been inspected by the registered professional civil engineer who typically inspects the embankments (or the designee); and (3) All damages indicating a weakened condition of the pond have been remedied. <p>At that time, inflow pumping operations may also be resumed, as needed.</p>	>= 30 inches

Problem	Indicator	How to Evaluate the Problem	Recommended Actions to be Taken
Burrow Holes	Holes in the embankment varying in size from about one inch in diameter to one foot in diameter caused by animals.	If the holes do not penetrate through the embankment the situation is usually not serious. Some animal holes will have soil pushed out around the hole in a circular fashion which may look like a boil. Watch for the movement of water and soil particles from these holes to determine whether they are boils.	Backfill as deeply as possible with impervious material. If rodents become a nuisance, an effective rodent control program as approved by the DNR District wildlife biologist should be implemented. Condition C
Cracks	Longitudinal Cracking: Cracking along the length of the embankment.	This form of cracking can indicate the beginning of a slide or be an uneven settlement of the embankment.	Monitor the crack for future changes and contact a qualified engineer for assistance in the evaluation of the crack and recommended repairs. Condition B
	Transverse Cracking: Cracking across the embankment from upstream to downstream surfaces.	This form of cracking can indicate uneven settlement or the loss of support below the crack. Such cracks usually occur over an outlet conduit, near the abutments, or in the taller portion of the embankment.	If the crack does not extend completely across the embankment and the pond water elevation is more than 10 feet below the base of the crack, monitor the crack for future changes and contact a qualified engineer for assistance in the evaluation of the crack and recommended repairs. Condition C If the crack extends across the embankment or the pond water level is less than 10 feet below the base of the crack, both the upstream and downstream sides of the embankment should be protected with a plug and an inverted filter as described under seepage. The EMA office should also be notified of the situation so they may be prepared to act if the condition worsens. Condition B

Problem	Indicator	How to Evaluate the Problem	Action To Be Taken
Slides	Movement of a portion of the embankment, either the upstream or downstream slope, toward the base of the embankment	The slide does not pass through the crest and does not extend into the embankment more than five feet measured perpendicular to the slope. or The slide passes through the crest and that the water elevation is more than 10 feet below the lowered crest.	A qualified engineer should be consulted before any repairs are initiated to determine the cause of the slide and to recommend any modifications to prevent future slides. The downstream side of the embankment should be watched for the emergence of any water either through or opposite the slide. If water is discharging, the area should be treated as a seepage location and monitored. Condition B
		The slide passes through the crest and the water elevation is less than 10 feet below the lowered crest.	This condition is critical and failure should be considered imminent. Notify the EMA office for evacuation of the breach area. Armor the crest of the lowered portion of the embankment and try to restore the lost freeboard. If seepage is also occurring, take the appropriate actions noted above. Condition A
Seepage	Wet area on downstream embankment slope (or any other area downstream of the embankment) with very little or no surface water, or very minor seeps. or with moderate seeps of clear or relatively clear water with rate of flow <u>not increasing</u> .	This condition may be caused by infiltration of rain water which is not serious, or may be the start of a serious seepage problem, which would be indicated by a quick change to one of the conditions. Measure the flow of water periodically and note any changes in clarity.	No immediate action required. However, the location of the seepage should be noted and observed for future comparison. Condition C
	Wet area on downstream embankment slope (or any other area downstream of the embankment) with moderate seeps of clear or relatively clear water with rate of flow <u>increasing</u> .	Measure the flow periodically and note any changes in clarity. Inspect downstream areas for any new seeps.	Contact a qualified engineer for an immediate inspection. Observe the condition constantly for any further changes in flow rate or clarity unless notified otherwise by the engineer. Condition B

Problem	Indicator	How to Evaluate the Problem	Action To Be Taken
<p>Seepage (cont.)</p>	<p>Piping (seepage with the removal of material from the foundation of the embankment) with moderate to active flows of cloudy to muddy water.</p>	<p>If the water is cloudy to muddy and the rate of flow is increasing, this condition could lead to failure of the embankment. If there is an upstream whirlpool caused by water passing through the embankment, failure of may be imminent.</p>	<p>Immediate action is necessary. If no whirlpool is noted on the upstream side of the embankment, try to <u>reduce</u> the loss of material from the embankment by placing an inverted filter over the seepage area. The filter should consist of a three to five feet thick blanket of material graded from coarse sand and pea gravel at the interface with the seepage area to 3-inch stone at the resulting outer face. If needed, use larger stones on the top of the filter. Use filter cloth at the bottom of the filter if available. Do not try to <u>plug</u> or <u>stop</u> the flow of water from this location. Notify the EMA offices for evacuation of the embankment breach area.</p> <p>Condition A</p> <p>If a whirlpool is noted on the upstream side, notify the EMA offices for evacuation of the breach area. Attempt to construct the inverted filter or boil ring over the seepage area on the downstream side as noted above. The thickness of the section will generally be greater than five feet. Plugging of the upstream entrance of the piping failure should also be attempted using large rock or anything else that is available. If the large material placed in the hole appears to have reduced the flow, follow with progressively smaller material to seal the entrance.</p> <p>Condition A</p>
	<p>Boils (soil particles deposited around a water exit forming a cone varying from a few inches in diameter (spaced two to three feet apart) to isolated locations several feet in diameter in the floodplain downstream).</p>	<p>Evaluation of the problem is the same as noted above for the various flow conditions, i.e. clear and constant, clear and increasing, and cloudy or muddy and increasing.</p>	<p>Evaluate as above for emergency condition.</p>

Company	Contact	Primary	Secondary	Email
Owner/Operator(s)				
Falcon Development	Ron Froh	314-858-0038		rfroh@commercialliabilitypartners.com
Site Safety Manager	Jesse Froh	314-580-6736		jfroh@commercialliabilitypartners.com
Engineer(s):				
ATON Environmental	Adam Peetz	636-349-0202	314-616-0279	adam@atonenv.com
Contractor(s):				
FB Remediation	Dennis Alred	269-317-3633		mailto:dallred@fbremediation.com

Department	Contact	Primary	Secondary	Email
911 will notify local officials:				
County Sherriff	Jeremy Shipley	903-389-3236		sheriffshipley@co.freestone.tx.us
Police Chief - Fairfield	David Utsey	903-389-3901		
Police Sergeant - Fairfield	Albert Gallegos, Jr.	903-389-3901		
Fire Chief - Fairfield	Chandler Baggerly	903-389-6187		fairfieldfirechief@yahoo.com
EHS – Chief Investigator	Bill Madding	903-391-9663		
EMA Coordinator - Local	Linda Grant	903-389-3335	903-879-3239	lgrant@co.freestone.tx.us
TDEM Region 6 Assistant Chief	Jay Hall	210-531-4336		Jay.Hall@tdem.texas.gov
TDEM District 11 Coordinator	Martin Widtfeldt	254-759-7165	254-379-0087	
Director of Public Works - Fairfield	Clyde Woods	903-389-2633		
Other contacts:				
TCEQ	Reporting Line	512-463-7727	512-239-2507	oce@tceq.texas.gov
SERC	Reporting Line	1-800-832-8224		
National Response Center	Reporting Line	1-800-424-8802		