

**TEXAS MUNICIPAL POWER AGENCY
GIBBONS CREEK STEAM ELECTRIC STATION
COAL COMBUSTION RESIDUE SURFACE IMPOUNDMENTS**

40 CFR §257.73(2) – Periodic hazard potential classification assessments

(i) The owner or operator of the CCR unit must conduct initial and periodic hazard potential classification assessments of the CCR unit(s) according to the timeframes specified in paragraph (f) of this section (by October 17, 2016). The owner or operator must document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment or a low hazard potential CCR surface impoundment. The owner or operator must also document the basis for each hazard potential classification.

CCR surface impoundments analyzed for hazard potential include the Ash Ponds A, B and C and the scrubber sludge pond. The hazard potential for each impoundment was evaluated for:

- Structural Integrity (dam safety)
- Impact to Surface Water
- Impact to Ground Water

General Information

General information for each impoundment is provided for reference purposes:

Ash Ponds A, B and C: The ash ponds consist of a three cell impoundment area separated by earthen dikes constructed in 1977 to 1978 as part of the original GCSES construction. They were originally designed to handle ash from the power plant that was using local lignite as the source of fuel. In the mid 1990's the power plant was converted over to use higher quality coal from Wyoming. The ponds are still in use, however, they ash loading was significantly reduced due to the change in fuel source. Each cell (identified as A, B and C) measures approximately 125 feet wide by 1700 feet long (measured at the bottom of each compartment) by 20 feet in depth and have 3H:1V earthen sideslopes. The top of the perimeter/interior berms/dikes are at elevation 270 with the bottom elevation at 250 (according to original site plans). The total available volume for CCR and water (measured to the top of the perimeter dikes) is approximately 150 acre-feet per cell. Only a portion of the available volume is impounded. Existing ground elevation adjacent to Pond A is around 258.0 indicating that approximately 8 feet of the available volume is incised and not subject to breaching. The low elevation adjacent to Pond B is around 262.0 indicating approximately 12 feet being incised and adjacent to Pond C is 270.0 indicating that the entire volume is incised. There is no uncontrolled surface water runoff (off-site) flowing to Ponds A, B and C. The only rainfall they receive is what falls directly onto the ponds.

Sludge Pond: The sludge pond is located to the west of the ash ponds and is a single impoundment also constructed in 1977 to 1978. A liner was added to the bottom of the pond in 1983. The pond measurements are approximately 260 feet and 350 feet wide and 615 feet and 635 feet long (measured at the bottom of the impoundment) by 20 feet in depth with 3H:1V sideslopes. The total available volume for CCR and water is approximately 115 acre-feet (measured to the top of the perimeter dike). Based on available site plans, this volume is almost entirely or is entirely impounded. There is no uncontrolled surface water runoff (off-site drainage) flowing to the sludge pond. The only rainfall it receives is what falls directly onto it.

Structural Integrity (dam safety)

The Mine Safety and Health Administration (MSHA) provides criteria to classify impoundments and dams as either low, significant or high hazard. Consistent with the hazard potential classification system and criteria for dams in use by federal agencies, the three hazard potential classifications for dams are defined as follows:

1. Low hazard potential. Facilities where failure would result in no probable loss of human life and low economic and/or environmental losses. Such facilities are usually located in rural or agricultural areas where losses are limited principally to the owner's property or where failure would cause only slight damage to farm buildings, forest and agricultural land and minor roads.
2. Significant hazard potential. Facilities where failure would likely not result in loss of human life, but can cause economic loss, environmental damage, or disruption of lifeline facilities. Such facilities are generally located in predominantly rural areas, but could be in populated areas with significant infrastructure and where failure could damage isolated homes, main highways and minor railroads or disrupt the use of service of public utilities.
3. High hazard potential. Facilities where failure will probably cause loss of human life. Such facilities are generally located in populated areas or where dwellings are found in the flood plain and failure can reasonably be expected to cause loss of life, serious damage to homes, industrial and commercial buildings and damage to important utilities, highways or railroads.

There are no habitable structures located downstream of these ponds and no loss of human life is expected. Any downstream losses would be limited to the owner's property. The impoundments receive routine maintenance and inspections. Recent and previous inspections have not identified any significant structural issues. Additionally, the offsite drainage area and associated uncontrolled inflows do not exist. Based on these criteria, the ponds are classified as low hazard with regards to structural integrity.

Impact to Surface Water

Factors taken into consideration regarding surface waters include relation to the 100 year floodplain, location (siting) of the CCR impoundments, classification of receiving waters, proximity to surface water supply intakes, size of the impoundments and volume of CCR material subject to loss due to failure. All four of the ponds are located outside of the existing 100 year floodplain as shown on FEMA maps. The structures are not located on a stream channel or natural drainage. The Navasota River (Segment 1209) is the closest classified river segment downstream of the impoundments and is located approximately 10 miles downstream. The nearest water rights is approximately 25 miles downstream (irrigation use). No known water supply intakes are located between these impoundments and the Navasota River. Any CCR material discharging from the ash ponds would most likely be contained within the rail loop that surrounds the ponds. Any material not contained within the rail loop would drain to the Gibbons Creek Reservoir which is owned by TMPA.

The estimated volume of CCR material in the ponds was estimated using TMPA estimates. TMPA estimates approximately 220,000 CY of CCR in the sludge pond (approximately 134,000 tons based on 45 #/ft³). Based on the estimated percentage full, the ash ponds are estimated to have approximately 37,000 tons in Ponds A and B, and 88,000 tons in Pond C. If

embankment failure were to occur, it has been predicted that the majority of the CCR will remain within the impoundment footprint or only migrate a short distance downstream. This is primarily due to the absence of any upstream watersheds and associated inflows that would cause more CCR material to wash out of the impoundments. The total volume of the ash ponds is approximately 150 acre-feet (per unit) and the sludge pond is approximately 115 acre-feet. These are classified as small impoundments.

Based on the criteria evaluated regarding impact to surface water, the hazard potential would be low.

Impact to Ground Water

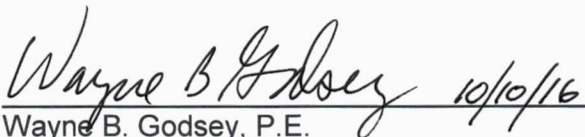
Groundwater monitoring wells have been installed to begin groundwater sampling and evaluation. No known negative impacts to groundwater have occurred during the past 30-40 years of operation. The closest water supply well to the impoundments is approximately 1400 to 1500 feet to the south (two residential wells). Based on past experiences, the hazard potential to groundwater impacts is low. After results of the groundwater monitoring are available, this hazard potential can be re-evaluated if deemed appropriate.

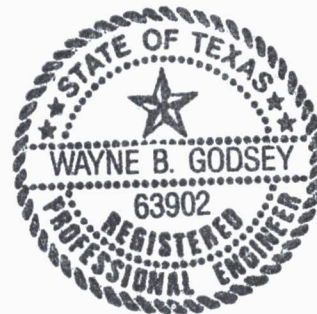
Overall Hazard Potential

Based on the criteria reviewed for structural integrity, impact to surface water and impact to groundwater, it is my opinion that the overall hazard potential of each individual impoundment is low. These are small, well maintained impoundments with little to no off-site watersheds that present minimal possible impacts to the environment.

Certification

This initial hazard classification assessment was prepared in accordance with 40 CFR §257.73(2) and was prepared by:


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