Table 2.2.1. Potential impacts of the proposed action and the no-action alternative

Proposed action	No-action alternative
Aesthetics	
Construction would produce minor short-term visual impacts, but visual characteristics would not differ appreciably over the long term from those currently existing at the site. Except for the boiler stack, structures for the LEBS proof-of-concept plant would be comparable in stature and architecture with existing structures at the Turris Mine's coal handling and processing complex immediately south of Township Road 600N from the site of the proposed plant and with the cleaned coal storage and loading facilities that would be adjacent to the proposed plant north of the road. The boiler stack, with a height of 293 ft, would represent a 36 ft (14%) increase in vertical profile compared to the highest structures currently existing at the Turris Mine.	The viewing landscape, which currently includes industrial buildings, coal storage silos (257 ft), coal piles, coal conveyors, and waste disposal ponds, would remain unchanged. No scenic vistas or aesthetic landscapes are present in the project area.
Atmospheric resources	
Construction No exceedances of the Federal and state-adopted National Ambient Air Quality Standards (NAAQS), including the standard for 24 hour averaged PM_{10}, would be expected beyond about 300 ft from the edge of the construction area. For annual averaged PM_{10}, total concentrations would be less than 70% of the relevant NAAQS at 300 ft from the edge of the construction area.	*Construction* Atmospheric resources would be unaffected because no construction associated with the proposed power plant would occur. No change in ambient air quality, which attains Federal and state standards for quality, would occur.
Operation The Prevention of Significant Deterioration (PSD) modeling analysis shows that expected pollutant concentrations would typically be <10% and would always be <20% of allowable increments. PSD increments would also not be exceeded when other PSD emission sources in the region are included in the modeling. No exceedances of the NAAQS would be expected from the combined emissions of the proposed plant and other regional sources. The contribution of emissions from the proposed plant to acidic deposition and to global climate change would be expected to be negligible. Relatively small amounts of non-criteria pollutants, including arsenic, beryllium, sulfuric acid mist, mercury, hydrogen chloride, organic emissions, and various heavy metals, would be produced. The levels of non-criteria emissions	*Operation* Existing air quality in the area, which is in attainment of the NAAQS, would remain essentially unchanged. Potential benefits to regional air quality that could result from the electricity generated by the proposed plant displacing electricity supplied by older, less efficient facilities that have higher air pollution emission rates would not be realized.

Table 2.2.1. Potential impacts of the proposed action and the no-action alternative

Proposed action	No-action alternative
would pose a negligible risk to workers and members of the public.	
Water quality and use	
Construction The construction contractor would either provide potable water from off-site sources or obtain water from the new wells installed during construction. The field drainage water system and groundwater obtained from the wells would be used to provide water for construction activities. The anticipated small additional demand would not be expected to cause the water sources to be overdrawn. Impacts attributable to runoff, erosion, sedimentation, and accidental spills would be minimal.	*Construction* Because no construction would occur, existing water uses and quality would be unaffected.
Operation Operation of the proposed plant would require about 1,195 gpm of water, of which 1,145 gpm would be provided from a retention pond installed to capture water from field drainage runoff. No new water discharge would result. Neither a small volume (3 gpm) of sanitary water inflow to the Turris Mine's existing sewage treatment plant nor inflow of 62 gpm from the proposed power plant into the Turris Mine's water pond would be expected to result in any substantive change or impacts to operations at the Turris Mine.	*Operation* Existing impacts on water quality and use from operations at the Turris Mine would continue. Water supply, use, sampling, and discharge activities at the mine comply with applicable regulations and would be expected to remain essentially unchanged. The mine currently discharges water off-site only during substantial rainfall events that cannot be controlled with the mine's pumping system.
Geology and groundwater resources	
Groundwater consumption by the village of Elkhart (35 gpm) and for existing operations at the Turris Mine (62.5 gpm) would not be expected to change. Major buildings and structures would not be constructed in areas where subsidence from mining activities would be likely, and the low level of seismic activity in the area would not be sufficient to cause appreciable damage. Damage to the plant from surface subsidence (from coal mine collapse) or earthquakes would not be expected. Soil compaction and paving on about 3 acres of the 5 acre plant site would reduce soil permeability and increase storm water runoff rates. Power plant operations would not produce any discharges that would contaminate groundwater supplies. Water requirements for operation of the proposed power plant would be obtained from	Existing consumptive uses of groundwater in the area would continue. The village of Elkhart would continue to withdraw approximately 35 gpm, and 62.5 gpm would continue to be withdrawn by the Turris Mine to support on-going operations. Groundwater quality monitoring at the Turris Mine would continue.

Table 2.2.1. Potential impacts of the proposed action and the no-action alternative

Proposed action	No-action alternative
field drainage runoff and new groundwater wells. The Pearl/Kansan outwash aquifer would be capable of supporting the plant's water requirement, if needed during periods of drought, but declines in groundwater levels may occur in nearby water supply wells. Also, water quality in the aquifer could potentially be degraded as a result of excessive *drawdown*. A portion of the water from the proposed power plant's cooling tower would be discharged to the Turris Mine's fresh water pond for use in mine operations, which could reduce the amount of groundwater usage by the mine. Groundwater monitoring would be conducted to periodically test drawdown and quality of the aquifer feeding water supply wells, including the village of Elkhart's wells. If results from the groundwater testing program indicate water quality or flow problems for the Elkhart water supply, power plant output would be reduced, or the plant could temporarily suspend operations. New sources of water supply for the plant and for the community would be examined.	
Solid waste	
No adverse environmental impacts would be expected during construction and operation of the plant. Construction wastes would be transported to off-site landfills. Vitrified ash (9,400 lb/hr, or 41,172 tons per year) would be marketed for sale. If markets can not be established, the materials would undergo disposal at the mine. Commercial-grade gypsum (about 24,000 lb/hr, or 105,120 tons per year) would be moved for permitted disposal at the mine or at a permitted CBEC site. Waste disposal capacity at the mine and at off-site locations would be adequate to handle all construction and operation wastes.	The Turris Mine currently accepts about 135,000 tons per year of coal combustion wastes from off-site users. That rate would be expected to continue. The additional wastes resulting from construction and operation of the proposed power plant would not be generated.
Ecological resources	
For both construction and operation of the proposed power plant, no adverse impacts on terrestrial or aquatic ecosystems would be expected on the plant site or in the immediate vicinity. No threatened or endangered species are found on or near the site. Expected impacts on biodiversity would be minimal.	Existing terrestrial and aquatic resources, which are not regarded as particularly important or unique, would remain essentially unchanged. The number of plant and animal species present on the mine property is quite low relative to natural grasslands and forests typical of the region.

Table 2.2.1. Potential impacts of the proposed action and the no-action alternative

Proposed action	No-action alternative
Cultural resources	
No known historic or archaeological resources exist on the plant site. However, if such resources would be discovered during construction, work would be stopped and an archaeologist with the Illinois Historic Preservation Agency would be contacted.	Operations at the Turris mine are not affecting cultural resources. A Phase I cultural resources survey indicated that the site does not contain any archaeological resources.
Floodplains and wetlands	
Flooding at the plant site would not be expected, and floodplain encroachment would not occur. Neither construction nor operation of the proposed plant would require or create any stream diversions that would alter existing off-site drainage patterns. No wetland areas would be affected.	Floodplains in the area would not be affected by the no-action alternative, and the ponds on the Turris Mine's property have little or no significance as wetlands. Examination of Natural Wetland Inventory maps, visual inspections, and consultations with the U.S. Army Corps of Engineers and the Illinois Department of Natural Resources confirm the absence of jurisdictional wetland resources in areas potentially affected by the proposed power plant.
Socioeconomics	
Construction and operation of the proposed power plant would result in a small increase in construction (180), operating (25), and mining (20) jobs. These beneficial increases in employment would not be expected to create any strains on housing and public services.	The anticipated minor or temporary increases in population, employment, and per-capita income and the resulting minor additional demands on housing and public services from power plant construction and operation would not occur.
Human health	
No adverse impacts to public health would be anticipated as a result of construction and operation of the proposed plant. As identified in the discussion of atmospheric resources, emissions of air pollutants would not result in exposure levels that would produce adverse effects on public health or welfare.	No changes from existing conditions would be expected.
Worker safety	
Construction Based on accident rates for the U.S. construction industry, about 5 injuries would statistically be expected to occur among the average of 100 workers.	*Construction* Because no construction would occur at the site, no potential for construction-related injuries would exist.
Operation Worker safety and health considerations would be dominated by physical hazards, primarily equipment accidents, noise, heat stress,	*Operation* Physical hazards associated with operation of the proposed plant would not exist.

Table 2.2.1. Potential impacts of the proposed action and the no-action alternative

Proposed action	No-action alternative
and confined spaces. Regulations established by the Occupational Safety and Health Administration (OSHA) and corporate policies of the BBP team would be expected to mitigate the risks from these types of safety hazards.	
Noise	
Construction Expected noise levels from construction would be <54 dB(A) at 3,000 ft from the site, which is within EPA guidelines for preventing activity interference and annoyance.	*Construction* Current ambient noise levels, which are characteristic of the relatively quiet rural environment, would not change.
Operation No significant noise impacts would be expected.	*Operation* Current ambient noise levels, which are characteristic of the relatively quiet rural environment, would not change.
Traffic	
For both construction and operation, on-site and off-site transportation corridors have sufficient capacity to handle expected increases in traffic without significant adverse impacts. A maximum daily traffic increase of 180 passenger vehicles and 75 truck vehicles during construction and a permanent increase of 45 passenger vehicles and 35 truck vehicles during operation of the power plant would result. No increase in coal truck traffic would occur.	Existing traffic patterns would remain relatively unchanged. A maximum traffic volume of 800 truck-trips per day exists on Township Road 600N; this traffic is spread over a 24 hour period, with about two-thirds occurring during the day.
Land use	
No adverse impacts to on-site or off-site land use would be expected to result from construction and operation of the proposed plant. A 22-acre parcel of land currently leased by Turris Coal Company for corn and soybean production would be used for construction of a water retention pond. About 0.01% of the land that is currently used for crop production in Logan County would be used for the new water retention pond.	The current land uses in the area – primarily the Turris Mine and agriculture – would continue.
Environmental justice	
No disproportionate adverse impacts to minority or low-income populations would be expected because the percentages of minorities and households below the poverty level in Elkhart are less than those in Logan County and Illinois, and because no adverse impacts to any nearby residents would be anticipated.	No environmental justice impacts would occur.