R. R. Sgarro
Manager-Nuclear Regulatory Affairs

PPL Bell Bend, LLC
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8102 FAX 570.802.8119
rrsgarro@pplweb.com

November 1, 2010

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

BELL BEND NUCLEAR POWER PLANT
BBNPP PLOT PLAN CHANGE COLA
SUPPLEMENT, PART 3 (ER); SECTION 3.1
BNP-2010-278 Docket No. 52-039

References: 1) BNP-2010-175, T. L. Harpster (PPL Bell Bend, LLC) to U.S. NRC, "July 2010 BBNPP Schedule Update", dated July 16, 2010

2) BNP-2010-239, R. R. Sgarro, (PPL Bell Bend LLC) to U.S. NRC, "Supplement Schedule Update," dated September 22, 2010

3) BNP-2010-246, R. R. Sgarro (PPL Bell Bend, LLC) to U.S. NRC, "BBNPP Plot Plan Change Supplement Schedule Update," dated September 28, 2010

In References 1 and 2, PPL Bell Bend, LLC (PPL) provided the NRC with schedule information related to the intended revision of the Bell Bend Nuclear Power Plant (BBNPP) footprint within the existing project boundary which has been characterized as the Plot Plan Change (PPC). As the NRC staff is aware, the plant footprint relocation will result in changes to the Combined License Application (COLA) and potentially to new and previously responded to Requests for Additional Information (RAIs). PPL declassified this docketed schedule information from regulatory commitment status in Reference 3, with an agreement to update the staff via weekly teleconferences as the project moves forward.

PPL has committed to provide the NRC with COLA supplements, consisting of revised COLA Sections and associated RAI responses/revisions, as they are developed. These COLA supplements will only include the changes related to that particular section of the COLA and will not include all conforming COLA changes. Conforming changes for each supplement necessary for other COLA sections will be integrated into the respective COLA supplements and provided in accordance with the schedule, unless the supplement has already been submitted. In the latter case, the COLA will be updated through the normal internal change process. The revised COLA supplements will also include all other approved changes since the submittal of Revision 2. All COLA supplements and other approved changes will ultimately be incorporated into the next full COLA revision.

Enclosure 1 provides the revised BBNPP COLA Supplement, Part 3 (Environmental Report), Section 3.1, Revision 2a. The revised BBNPP COLA section supersedes previously submitted information in its entirety. No departures and/or exemptions to this BBNPP COLA section have been revised as a result of the PPC. No new or revised RAI responses are included in this transmittal.

D102
NRO

The only new regulatory commitment is to include the revised COLA section (Enclosure 1) in the next COLA revision.

If you have any questions, please contact the undersigned at 570.802.8102.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 1, 2010

Respectfully,

Rocco R. Sgarro

RRS/kw

Enclosure 1: Revised BBNPP COLA Part 3 (ER); Section 3.1, Revision 2a

cc: (w/o Enclosures)

Mr. Michael Canova
Project Manager
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Mr. William Dean
Regional Administrator
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dr. Donald Palmrose
Senior Project Manager
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Enclosure 1

Revised BBNPP COLA Part 3 (ER); Section 3.1, Revision 2a

3.1 EXTERNAL APPEARANCE AND PLANT LAYOUT

The site for the proposed nuclear power plant is the BBNPP property located approximately 5 mi (8 km) northeast of the borough of Berwick, Pennsylvania, and 1.5 mi (2.4 km) to the north and west of the north branch of the Susquehanna River, west of the existing Susquehanna Steam Electric Station (SSES) in Salem Township, Luzerne County, Pennsylvania on properties currently owned either solely by PPL Corporation (100%) or jointly by PPL Susquehanna, LLC (90%) and Allegheny Electric Cooperative (10%). The terrain is a rolling plateau in a rural area of open deciduous woodlands, interspersed with grasslands and orchards as shown in Figure 3.1-1. The plant grade (finished ground surface) is at an approximate elevation of ~~674~~719 ft ~~(205~~(219.2 m) ~~above mean sea level.~~ and the finished floor elevation is 720 ft (219.5 m). References to elevation values in this section are based on ~~National Geodetic~~ North American Vertical Datum of ~~1929 (NGVD, 29),~~1988 (NAVD 88), unless otherwise stated.

The adjacent SSES features two boiling water reactors (BWRs), designated as Units 1 and 2. Each unit will have an electric generation capacity of 1,300 MWe after the extended power uprate project is completed (PPL, 2006). Existing plant structures occupy a developed area of approximately 487 ac (197 ha), with most of the plant-related structures located west of U.S. Route 11 (PPL, 2006). Additional property is located to the east of SSES on both sides of the Susquehanna River, including the Riverlands Recreation Area, which is located on 401 ac (162 ha) of land between U.S. Route 11 and the Susquehanna River (PPL, 2006). SSES Units 1 and 2 share a common control room, refueling floor, turbine operating deck, radwaste system, and other auxiliary systems (PPL, 2006). The existing SSES Intake and Discharge Structures are located on the west bank of the Susquehanna River. An Independent Spent Fuel Storage Installation is situated west of the SSES natural draft cooling towers. Access to the existing plant is via an onsite road which intersects U.S. Route 11 east of the plant, and a rail spur to the North Shore Railroad (NSRS, 2008).

The proposed plant is a U.S. ~~Evolutionary Power Reactor (EPR),~~ EPR, referred to as BBNPP. The U.S. EPR is a pressurized water reactor design with a rated core thermal power of 4,590 MWt. The rated and design gross electrical output for the EPR is approximately 1,710 MWe. Electrical power consumption is approximately 110 MWe for auxiliary loads, resulting in a rated and design net electrical output of approximately 1,600 MWe. The plant is proposed to be constructed west of the existing SSES in Salem Township. ~~Construction related~~ The area occupied by construction-related and new plant structures ~~will occupy approximately 630.3 ac (255 ha).~~ is described in Section 4.1.1.1 of the ER. BBNPP will be separated from SSES by a distance of approximately ~~5,000 ft (1,524 m).~~one mile (1.6 km).

Due to the distance and location from SSES Units 1 and 2, the new plant will have a separate protected area from that of the existing plant. A new access road will be built to connect BBNPP to U.S. Route 11. The existing rail spur will be extended from SSES to BBNPP. A Circulating Water System (CWS) Makeup Water Intake and Pump House along with discharge piping will be constructed for BBNPP just to the south of the existing SSES intake on the west bank of the Susquehanna River.

The BBNPP design is a four-loop, pressurized water reactor, with a Reactor Coolant System composed of a reactor pressure vessel that contains the fuel assemblies, a pressurizer including ancillary systems to maintain system pressure, one reactor coolant pump per loop, one steam generator per loop, associated piping, and related control systems and protection systems. The BBNPP Reactor Building and Turbine Building will be oriented side by side, with the Reactor Building oriented towards the west.

© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

The Reactor Building will be surrounded by the Fuel Pool Building, four Safeguard Buildings, two Emergency Diesel Generator Buildings, the Reactor Auxiliary Building, the Radioactive Waste Processing Building and the Access Building. Figure 3.1-1 shows the layout for BBNPP, depicting the following features: exclusion area boundary (EAB), site boundary , liquid and gaseous release points (i.e., discharge piping, and vent stack and CWS Cooling Tower, respectively) and their elevations and distances from the Reactor Building, meteorological towers, the construction zone, land to be cleared, waste disposal areas, and other buildings and structures both temporary (i.e., construction offices/ warehouses) and permanent.

~~TheSSES~~ The SSES Units 1 and 2 power block consists of the Reactor, Turbine Generator and Control Buildings. The rectangular complex measures approximately 300 ft (91.4 m) in width by 610 ft (186 m) in length. With the existing plant grade at an elevation of approximately 676 ft (206 m) NGVD 29 and the top of the Reactor Building at an elevation of approximately 201 ft (61.3 m) above grade. Additionally, SSES Units 1 and 2 have two natural draft, hyperbolic cooling towers. Each tower has an approximate height of 540 ft (164.6 m) and a base diameter of 426 ft (129.8 m). Other existing plant buildings are either concrete or steel with exterior metal siding.

The BBNPP Reactor Building is an upright cylinder concrete structure, capped with a spherical dome. The Reactor Building is 186 ft (56.7 m) in diameter with an overall height of 240 ft (73.2 m). The plant grade for BBNPP will be at an elevation of approximately ~~674~~719 ft ~~(205~~ (219.2 m). With the bottom of the Reactor Building ~~foundation36~~ foundation 35 ft (11 m) below grade, the new Reactor Building will rise approximately ~~204~~205 ft ~~(62.2~~(62.5 m) above grade. The top of the Reactor Building will be at an elevation of approximately ~~878~~ 924 ft ~~(267.6~~(281.6 m).

The vent stack for BBNPP will be the tallest new structure at approximately ~~211~~212 ft ~~(64.3~~(64.6 m) above grade or about 7 ft (2.1 m) above the Reactor Building. Similar to the existing plant, SSES Units 1 and 2, BBNPP will have a closed-loop cooling system. The BBNPP CWS cooling ~~tower~~towers will be ~~a round,~~ round hyperbolic concrete ~~structure~~structures with an overall diameter of 350 ft (107 m) and approximate height of 475 ft (145 m). Similar to SSES Units 1 and 2, other BBNPP buildings will be concrete or steel with metal siding. Figure 3.1-2 depicts an aerial view of SSES Units 1 and 2 with the proposed BBNPP superimposed on the photograph.

The ultimate heat sink function for BBNPP will be provided by four Essential Service Water System (ESWS) mechanical forced draft cooling towers situated above storage basin pools. Each of the four pools will have a minimum volume of 337,987 ft^3 (9,572 m^3), occupy a rectangular area approximately 124 ft (37.8 m) by 102 ft (31 m), and be bounded by the tower footprint. The pools will normally be supplied with non-safety-related makeup water from the Raw Water Supply System (RWSS). In the event of a design basis accident, the pools will be supplied with a safety-related makeup water using the onsite ESW Emergency Makeup System (ESWEMS) Retention Pond as detailed in Section 9.2.5 of the FSAR. The ESWS cooling towers will be 96 ft (29 m) tall. The Water Treatment Plant for the RWSS will be approximately 200 ft by ~~400~~350 ft (61 m by ~~122~~ 106.7 m) and situated ~~adjacent~~ to the ~~east~~northeast of the ~~ESWEMS Retention Pond.~~ BBNPP Switchyard. The Water Treatment Plant will be supplied with river water taken from the RWSS makeup line.

Figure 3.1-3 through Figure 3.1-6 are ground-level photographs of the BBNPP property taken from adjacent properties to the southwest, northeast, east and northwest. Major structures associated with BBNPP have been superimposed on these photographs to depict potential

© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

visual impacts as viewed from all four directions. There will be a minor visual impact from the addition of the two new cooling towers and the plume. No mitigation is required as the area already has two cooling towers from SSES which are also higher at 540 ft (165 m).

Forested areas bordering the site, particularly to the south, should provide some screening by trees so that only the tops of the taller new structures may be visible from adjacent properties at ground level. Most new buildings will not be visible since the taller structures will mask the lower rise structures. Topographical features (i.e., hills and valleys) will also help to screen and seclude new plant structures from surrounding properties even when foliage is seasonally absent. In addition, since BBNPP will be located approximately one mile (1.6 km) or more from the more populated concentrations of residential and commercial properties along U.S. Route 11, distance will help to shield BBNPP from view. Nevertheless, some properties immediately to the west of the site will experience direct visual impacts from BBNPP. The CWS Makeup Water Intake Structure on the west bank of the Susquehanna River should also have a minimal visual impact, considering its location near the existing SSES Intake Structure and given that it will only be visible from the river itself. The BBNPP discharge pipe for cooling tower blowdown and other plant liquid effluents will be routed underground to a submerged diffuser in the river and will not be visible. No other visual impacts from nearby ground-level vantage points are expected.

Aesthetic principles and concepts used in the design and layout of BBNPP include the following:

- ~~Selecting the southwestern portion~~ Locating plant facilities outside of ~~the BBNPP site, where a low point in topography exists, for the location of the BBNPP power block structures. This area will provide a low profile for the new plant~~ existing wetland areas and ~~should require less clearing due to pre-existing, cleared areas.~~waterbodies and preserving the site's natural hydrology.
- Placing the CWS Makeup Water Intake Structure and discharge piping near the existing, developed section of shoreline.
- Minimizing tree removal by locating ~~the concrete batch plant, construction lay-down areas, parking areas and construction offices and warehouses~~ plant facilities in either cleared fields or lightly forested ~~areas.~~areas where feasible.
- Transporting excavated and dredged material to an onsite spoils area outside designated wetlands.
- ~~Upgrading existing onsite roads as applicable to minimize the addition of~~ Adding a new ~~roads. However, proposed new roads will~~ access road to provide a direct ~~routes~~route to BBNPP and ~~will minimize~~ thereby minimizing the impacts to local roads and the disruption of existing traffic patterns from the construction and ~~existing plant traffic patterns.~~operation of the plant.

In addition to the above, exterior finishes for plant buildings will be similar in color and texture to those of the SSES Units 1 and 2 buildings. This provides for a consistent, overall appearance, by architecturally integrating the buildings on the two sites. Areas that are cleared supporting construction activities will be either maintained or restored by reseeding and replanting with native trees and vegetation, so that the BBNPP landscape blends with the SSES Units 1 and 2 landscapes and the remaining undisturbed areas on the BBNPP site. Figure 3.1-7 is an

© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

architectural rendering of BBNPP, depicting profiles of major buildings and landscaping features.

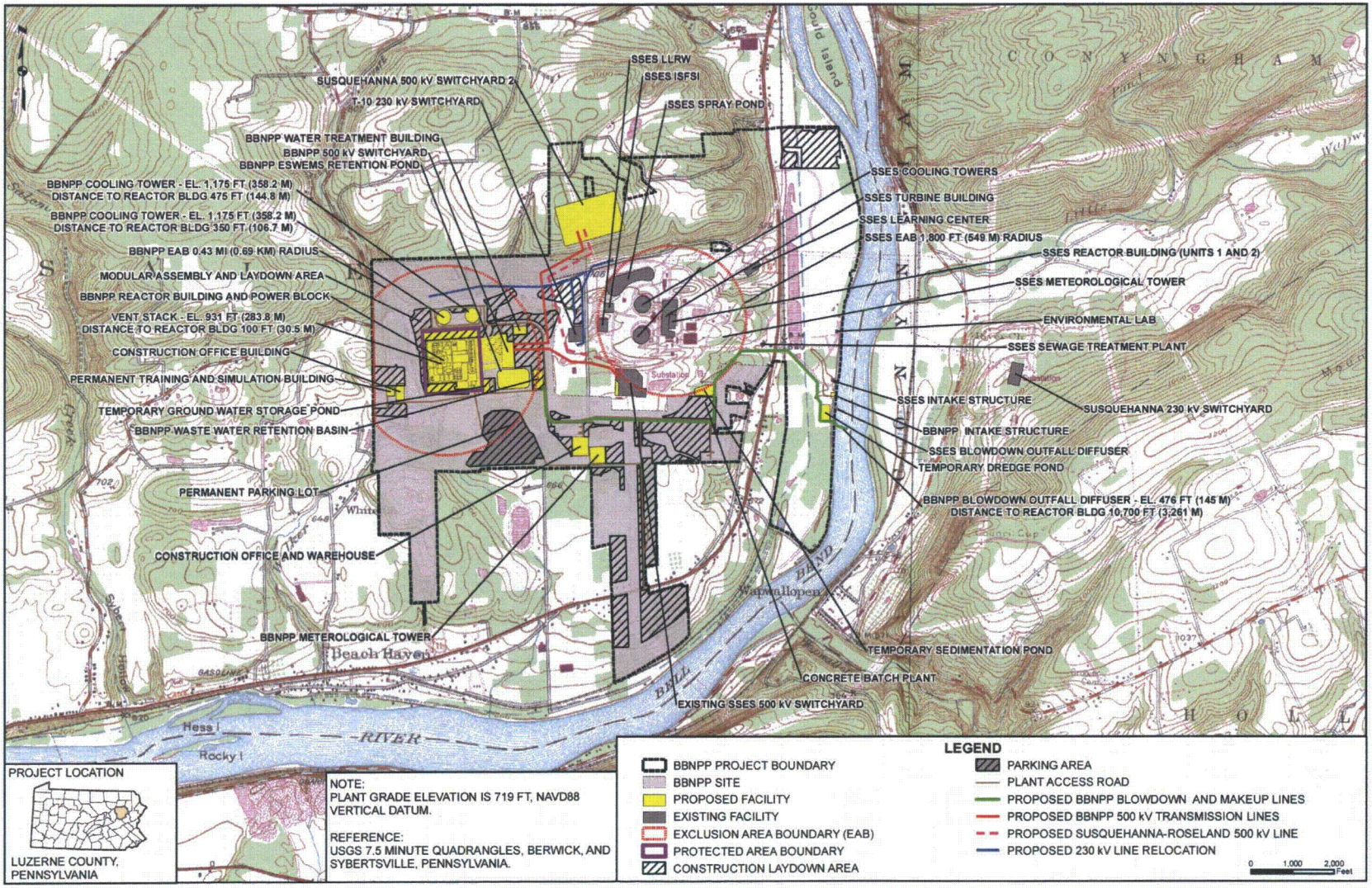
3.1.1 References

PPL, 2006. Susquehanna Steam Electric Station Units 1 and 2 License Renewal Application, Appendix E, Applicant's Environmental Report - Operating License Renewal Stage, Susquehanna Steam Electric Station, PPL Susquehanna LLC, September 2006.

NSRS, 2008. North Shore Railroad System, North Shore Railroad System Map, Website: http://www.nshr.com/NSHR/nshr.shtml, Date accessed: June 22, 2008.

© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

Figure 3.1-1— Site Area Topographical Map

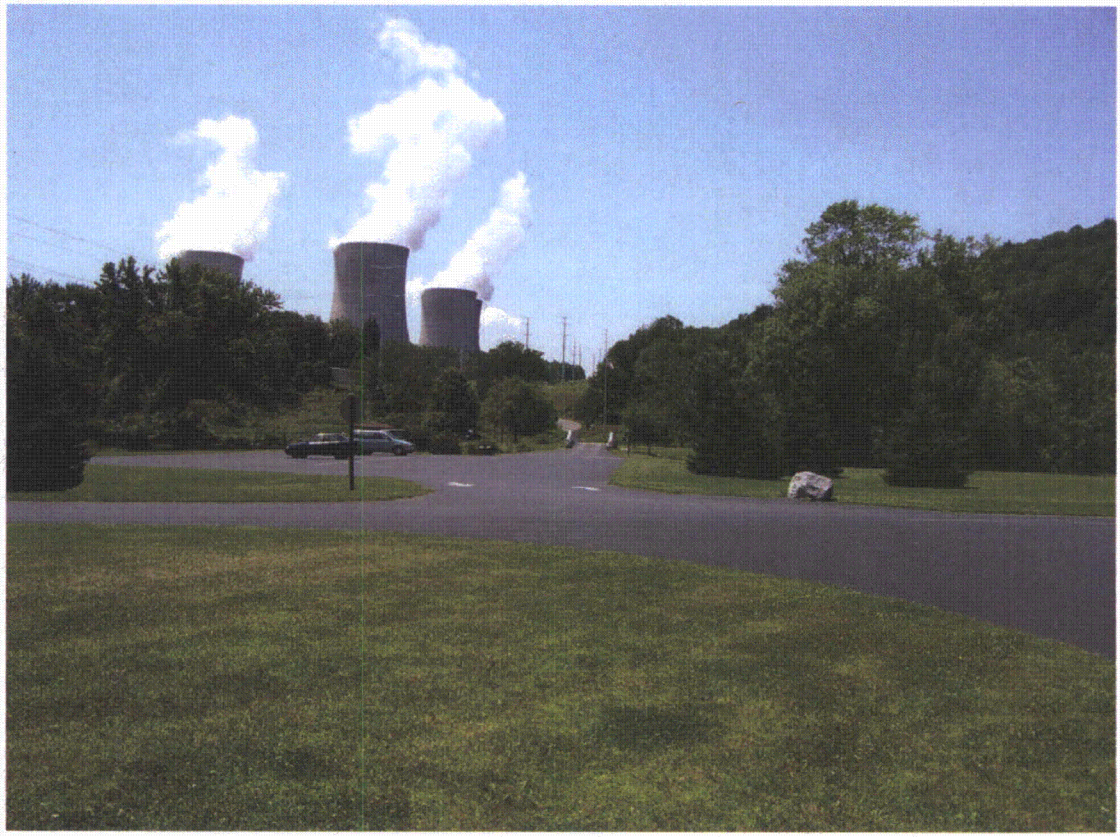


© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

Figure 3.1-2— Aerial View of Susquehanna Steam Electric Station Units 1 and 2 with Bell Bend NPP Superimposed

© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

Figure 3.1-3— Ground Level View Looking Southwest with the Bell Bend Structures Superimposed



© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

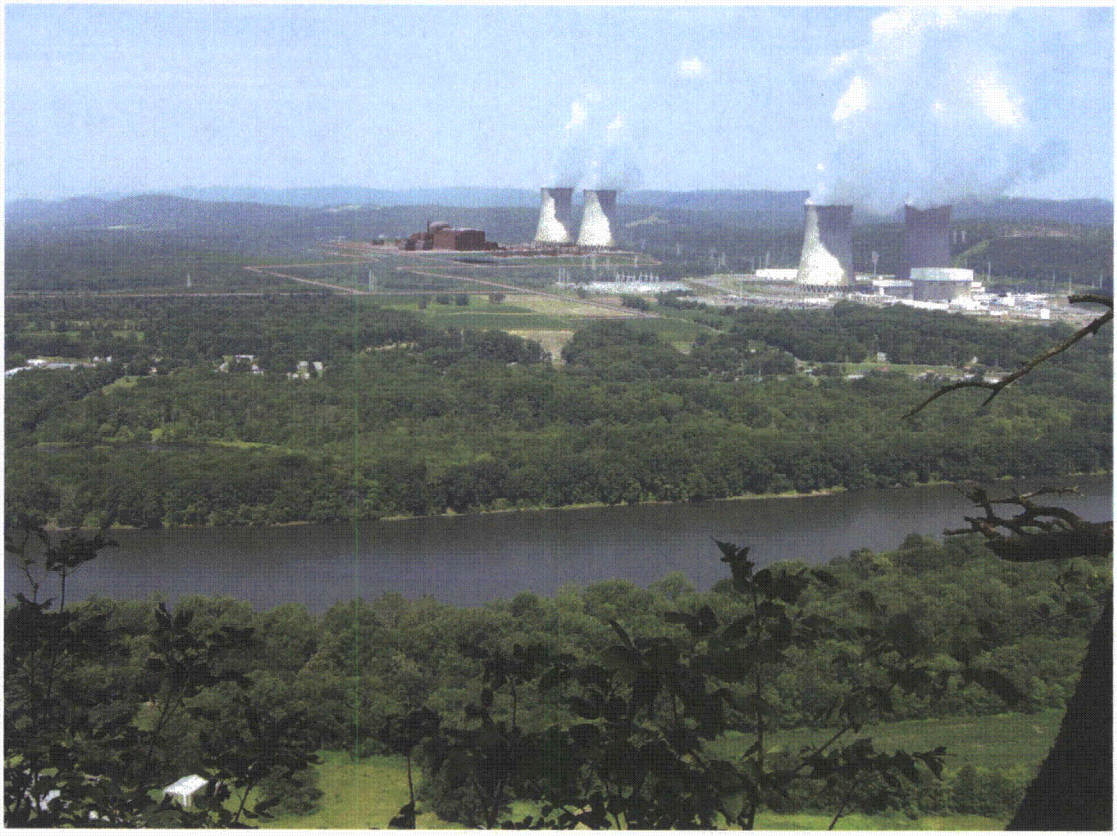
Figure 3.1-4— Ground Level View Looking Northeast with the Bell Bend Structures Superimposed

© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

Figure 3.1-5— Ground Level View Looking East with Bell Bend Structures Superimposed

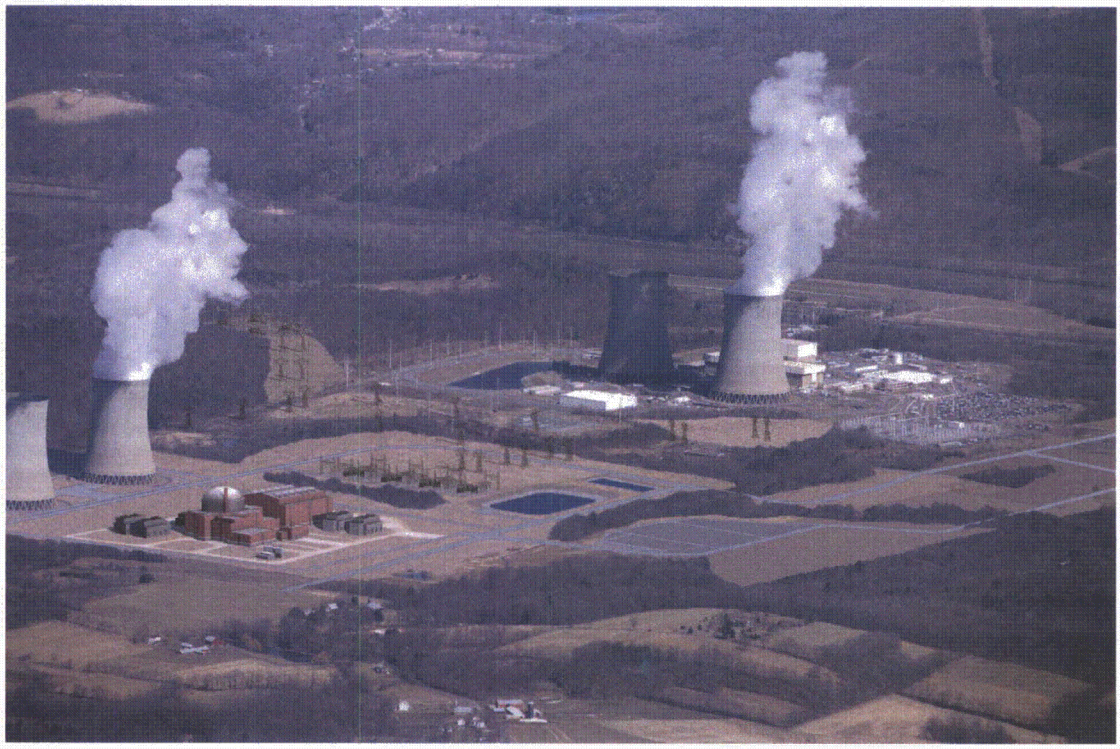
© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

Figure 3.1-6— Ground Level View Looking Northwest with the Bell Bend Structures Superimposed



© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED

Figure 3.1-7— Architectural Rendering of Bell Bend NPP Looking Northeast



© 2010 UniStar Nuclear Services, LLC. All rights reserved.
COPYRIGHT PROTECTED