

Clean Air Act Applicability Analysis Related to the Proposed Issuance of a Combined License for the Bell Bend Nuclear Power Plant

U.S. Nuclear Regulatory Commission  
Docket No. 52-039  
July 2015

## 1.0 Introduction

The U.S. Nuclear Regulatory Commission (NRC) has prepared this draft General Conformity Determination (GCD) in accordance with the U.S. Environmental Protection Agency (EPA) requirements at Title 40 of the *Code of Federal Regulations* (CFR) Part 93, Subpart B, “Determining Conformity of General Federal Actions to State or Federal Implementation Plans.”<sup>1</sup> For the reasons set forth below, the NRC has determined that the potential issuance of a combined license (COL) for the Bell Bend Nuclear Power Plant (BBNPP) would conform to the applicable implementation plan pursuant to 40 CFR Part 93, Subpart B.

By letter dated October 10, 2008, the NRC received an application from PPL Bell Bend, LLC (PPL) for a COL for BBNPP, in accordance with the requirements contained in 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” Subpart C, “Combined Licenses.” BBNPP would be located west of the existing Susquehanna Steam Electric Station (SSES) Units 1 and 2 in Luzerne County, Pennsylvania (PA). The proposed BBNPP would have a total electrical output of approximately 1710 megawatts-electric (PPL 2013). The latest version of the application, Revision 4, was submitted on April 12, 2013. Granting the requested COL for BBNPP would authorize the COL holder to undertake construction and operation activities regulated by the NRC.

The BBNPP proposed site is located on the Susquehanna River in Luzerne County, PA, approximately 5 miles (mi) northeast of the Borough of Berwick, PA, and 1.6 mi to the north and west of the north branch of the Susquehanna River. The proposed site would occupy 975 acres west of the existing SSES Units 1 and 2. The major metropolitan centers closest to the site include: Wilkes-Barre, PA, which is approximately 19 mi to the northeast; Allentown, PA, which is approximately 50 mi to the southeast; and Harrisburg, PA, which is approximately 70 mi to the southwest (PPL 2013).

Luzerne County is currently designated in 40 CFR 81.339 as unclassifiable/attainment for all criteria pollutants, with the exception of the 8-hour ozone standard. Luzerne County is in the Scranton-Wilkes Barre maintenance area for the 1997 8-hour ozone standard. Luzerne County is part of the Northeast Pennsylvania-Upper Delaware Valley Interstate Air Quality Control Region according to 40 CFR 81.55. Pennsylvania is part of the Northeast Ozone Transport Region.

## 2.0 Regulatory Background and Requirements

According to the regulations implementing the Clean Air Act of 1977, as amended (CAA) (42 U.S.C. 7506), at 40 CFR 93.150(a), no department, agency, or instrumentality of the Federal government shall engage in, support in any way or provide financial assistance for, license or

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<sup>1</sup> For reference, a glossary of excerpted terms used in 40 CFR 93.152 is provided in Section 7.0 of this draft GCD.

permit, or approve any activity which does not conform to an applicable implementation plan. As defined in Section 176(c)(1) of the CAA, conformity to an implementation plan means conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards; and that such activities will not:

1. cause or contribute to any new violation of any standard in any area;
2. increase the frequency or severity of any existing violation of any standard in any area; or
3. delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

To control pollution, the EPA established NAAQS for six pollutants termed the "criteria" pollutants. They are carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone<sup>2</sup> (O<sub>3</sub>), lead (Pb), particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and sulfur dioxide (SO<sub>2</sub>). The NAAQS are maximum allowable pollutant concentration levels in the air based on different averaging schemes for each specific pollutant. Pursuant to Section 107 of the CAA, in 40 CFR Part 81 the EPA designates geographical regions of the country as "attainment areas" if ambient pollutant concentrations are in compliance with the NAAQS and as "nonattainment areas" if ambient pollutant concentrations are not in compliance with the NAAQS. The EPA defines "maintenance area" as an area that was designated as nonattainment that has been re-designated in 40 CFR Part 81 to attainment, meeting the provisions of section 107(d)(3)(E) of the CAA and has a maintenance plan approved under section 175A of the CAA. Pursuant to Section 110 of the CAA, States with non-attainment areas are required to develop a state implementation plan (SIP) to demonstrate how the State will achieve and maintain the national primary and secondary ambient air quality standard within each air quality control region in the state.

Whether a Federal action conforms to an applicable implementation plan is determined according to the criteria and procedures set out either by the EPA regulations at 40 CFR Part 93, Subpart B or by an EPA-approved general conformity provision in the SIP itself. Pursuant to 40 CFR Part 51, "Requirements for Preparation, Adoption, and Submittal of Implementation Plans," Subpart W, each state may promulgate its own general conformity regulations in lieu of the Part 93, Subpart B general conformity regulations. Pennsylvania does not have its own EPA-approved general conformity regulations. Therefore, pursuant to 40 CFR 93.151, NRC Federal actions in Pennsylvania are subject to the provisions of 40 CFR Part 93, Subpart B. The EPA-approved SIP applicable to this conformity evaluation is the 2013 SIP, "*State Implementation Plan Revision: NO<sub>x</sub> Motor Vehicle Emission Budget Revisions Based on the MOVES2010a Model; and General Conformity Budget for Bell Bend Nuclear Power Plant for the Scranton/Wilkes-Barre Eight-Hour Ozone Maintenance Area for the 1997 Ozone National Ambient Air Quality Standard.*" This SIP was approved by EPA on June 15, 2015 (80 FR 34063).

In the Federal conformity regulations, specifically in 40 CFR 93.153(b), the EPA specifies emission rates for the criteria pollutants and their precursors based upon the severity of the nonattainment in an area (*de minimis* rates). Before a Federal agency can take its action, it is to perform an applicability analysis to determine whether the total direct and indirect emissions

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<sup>2</sup> Attainment of the O<sub>3</sub> NAAQS is implemented by controlling emissions of two O<sub>3</sub> precursors: nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC).

caused by its action would be below or above these *de minimis* rates. For O<sub>3</sub> and its precursors in states within the Northeast Ozone Transport Region, such as Pennsylvania, the *de minimis* rate in a maintenance area is 50 tons per year (tpy) of VOC and 100 tpy of NO<sub>x</sub>. A conformity determination is not required for emissions below these *de minimis* rates.

The NRC is required to perform a general conformity evaluation to ensure that emissions of air pollutants associated with its proposed Federal action to issue a COL authorizing certain construction activities and the operation of a new nuclear power plant in Luzerne County, PA, will not adversely affect the ability of the Scranton-Wilkes Barre maintenance area to meet the national 8-hour primary and secondary ambient air quality standards for ozone.

In the case, such as the one at hand, where multiple Federal agencies may have jurisdiction over a single project, each agency must make its own conformity determination pursuant to 40 CFR 93.154. When doing so, each agency is only responsible, according to the definition of "Federal action" in 40 CFR 93.152, for the portion of the project that it is permitting (58 FR 63227). Therefore, other Federal agencies from which permits or authorizations are required to build and operate BBNPP, such as the U.S. Army Corps of Engineers, are required to address the conformity determination requirements of 40 CFR Part 93, Subpart B relevant to their particular permits separately. In order to present the emissions attributable to NRC-authorized activities in context, this draft GCD describes both the entire project emissions and the portion of the entire project emissions that is attributable to NRC-authorized activities. Consistent with the CAA, the ultimate NRC conformity determination is focused on emissions attributable to NRC-authorized construction and operation, and the NRC has authority to impose mitigation measures only with respect to those emissions.

### **3.0 Process**

The conformity evaluation for a Federal action in a nonattainment or maintenance area involves conducting a threshold applicability analysis to determine whether a conformity determination is required. If this threshold is met, then a conformity determination is performed. Only the criteria pollutants for which the area is in nonattainment or maintenance are so analyzed.

An applicability analysis is the process of determining whether a Federal action must be supported by a conformity determination. A conformity determination is not required if the Federal action meets any of the exceptions in 40 CFR 93.153(c).

If the applicability analysis finds that one of these criteria is met, then no conformity determination is necessary and the conformity evaluation is complete. Otherwise, the Federal agency must perform a conformity determination to determine whether the Federal action conforms to the applicable implementation plan. Regarding its Federal action of potentially issuing a COL to authorize construction and operation of BBNPP, the NRC determined that none of the exceptions in 40 CFR 93.153(c) are met.

Per 40 CFR 93.152, when conducting an applicability analysis in support of issuing a Federal permit or license for some aspect of a non-Federal undertaking, the relevant activity is the part, portion, or phase of the non-Federal undertaking that requires the Federal permit. The project is a non-Federal undertaking because the applicant is a non-Federal entity, PPL, and it will be performing the construction and operation of the facility. The NRC identified the "part, portion, or phase" of the non-Federal undertaking of building BBNPP that requires the Federal permit of a COL as being the "construction" and "operation" of BBNPP. The emissions caused by the construction and operation of BBNPP are included in this conformity evaluation. The NRC

analyzed whether the total of direct and indirect emissions of VOC or NO<sub>x</sub> (which are ozone precursors) caused by this potential Federal action in a maintenance area for ozone would equal or exceed the applicable *de minimis* rates in 40 CFR 93.153(b)(2). For States within the Northeast Ozone Transport Region, such as Pennsylvania, the applicable 40 CFR 93.153(b)(2) maintenance area *de minimis* rates are 50 tpy for VOC and 100 tpy for NO<sub>x</sub>.

### **Emissions Related to NRC-Authorized Construction and Operation**

In a final rule dated October 9, 2007 (72 FR 57416), the NRC defined “construction” (10 CFR 50.10(a) and 51.4) as those activities that fall within its regulatory authority. Construction includes, among other things, the driving of piles, subsurface preparation, placement of backfill, concrete, or permanent retaining walls within an excavation, installation of foundations, or in-place assembly, erection, fabrication, or testing, which are for safety-related structures, systems, or components (SSCs). The NRC considers these construction activities, along with facility operating activities, to have a reasonable nexus to its authority under the Atomic Energy Act of 1954 (AEA) to regulate radiological health and safety and/or common defense and security. As discussed in Section 2.0 above, a Federal agency is responsible for the conformity evaluation for only those parts, portions or phases of the project over which the NRC has permitting or licensing authority. Therefore, the NRC is responsible for only the conformity determination for the nuclear power plant construction and operation activities that require NRC authorization.

While undertaking a conformity evaluation, the Federal agency must account for both the direct and indirect emissions caused by the Federal action over which the agency has permitting or licensing authority. As defined in 40 CFR 93.152, “direct emissions” means those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable. “Caused by,” as used in the terms “direct emissions” and “indirect emissions,” means emissions that would not otherwise occur in the absence of the Federal action. “Reasonably foreseeable” emissions are projected future direct and indirect emissions that are identified at the time the conformity determination is made; the location of such emissions is known and the emissions are quantifiable as described and documented by the Federal agency based on its own information and after reviewing any information presented to the Federal agency. Therefore, the NRC has determined that only those reasonably foreseeable emissions caused by the BBNPP construction and operation activities that require NRC approval and that occur at the Bell Bend site are direct emissions for the purposes of this analysis.

As defined in 40 CFR 93.152, “indirect emissions” means those emissions of a criteria pollutant or its precursors:

1. that are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action;
2. that are reasonably foreseeable;
3. that the agency can practically control; and
4. for which the agency has continuing program responsibility.

Here, as in the definition of direct emissions, “caused by” means emissions that would not otherwise occur in the absence of the Federal action and “reasonably foreseeable” means emissions that are identifiable and quantifiable. The differences between direct and indirect emissions are that indirect emissions occur at a different time or place as the action and are expressly limited to just those indirect emissions that the agency can practically control and for which the agency has continuing program responsibility. Even if a Federal licensing, rulemaking or other approving action is a required initial step for a subsequent activity that causes emissions, as is the issuance of a COL in this case, such initial steps do not mean that a Federal agency can practically control any resulting emissions. “Continuing program responsibility” means that a Federal agency has responsibility for emissions caused by (1) actions it takes itself; or (2) actions of non-Federal entities that the Federal agency, in exercising its normal programs and authorities, approves, funds, licenses or permits, provided the agency can impose conditions on any portion of the action that could affect the emissions. Therefore, emissions that may be reasonably foreseeable but that do not occur at the Bell Bend site are not indirect emissions for the purposes of this analysis because the NRC does not have continuing program responsibility for or practical control of these emissions. For example, per 10 CFR 50.10(a) and 51.4, the NRC does not have authority to control emissions resulting from the transportation of construction workers and construction materials to and from the prospective license holder’s site, or employees commuting to the operating plant. Thus, no offsite activities meet the CAA definition of “indirect emissions” such that they would be attributable to the NRC’s potential Federal action of issuing a BBNPP COL along with the onsite direct emissions caused by NRC-authorized construction and operation activities.

The emissions caused by the COL issuance include emissions from plant “operation” as well as from the plant “construction” discussed above. However, the CAA regulations at 40 CFR 93.153(d)(1) state that, notwithstanding the other requirements of 40 CFR Part 93, a conformity determination is not required for a Federal action (or portion thereof) that includes major or minor new or modified stationary sources that require a permit under the New Source Review (NSR) program or the Prevention of Significant Deterioration program. In the case of the potential operation of BBNPP, the NO<sub>x</sub> and VOC emissions caused by operation will be subject to NSR permitting under Pennsylvania Department of Environmental Protection’s (PA DEP) Plan Approval minor source permitting process. Therefore, under 40 CFR 93.153(d)(1), the NRC is not required to consider the NO<sub>x</sub> and VOC emissions from the operation of BBNPP in the following applicability analysis and conformity determination.

For these reasons, the following applicability analysis and conformity determination include only those direct, reasonably foreseeable emissions of NO<sub>x</sub> and VOC caused by the BBNPP construction activities that require NRC approval and that occur at the Bell Bend site. They do not include indirect construction emissions or emissions caused by the operation of BBNPP because the NRC does not have continuing program responsibility for or practical control of the indirect construction emissions and the operational emissions are subject to permitting under PA DEP Plan Approval minor source permitting process.

## **Emissions Related to Preconstruction Activities**

The NRC only regulates certain activities associated with building a nuclear power plant. NRC regulations at 10 CFR 50.10(a)(2) and 10 CFR 51.4 define the activities that are not NRC-regulated construction. Those activities associated with building the plant that are not within the purview of the NRC's Federal action are considered to be "preconstruction" activities as the term is used in 10 CFR 51.45(c). Such preconstruction activities include clearing and grading, excavating, erecting support buildings and transmission lines, and other associated activities. These preconstruction activities may take place before the application for a COL is submitted, during the NRC staff's review of a COL application, or after a COL is issued, all without NRC authorization.

Before a COL is issued, all emissions from preconstruction activities are neither direct emissions nor indirect emissions for purposes of compliance with the CAA because they are not caused or initiated by any NRC action as there has been no NRC-authorized action taken.

After a COL is issued, emissions from preconstruction activities are still not direct or indirect emissions (regardless of whether they occur at the same time and place as the action) for purposes of compliance with the CAA because preconstruction activities are not caused or initiated by the NRC action of issuing a COL. Furthermore, the NRC is not required to consider preconstruction activities in its conformity determination because 40 CFR 93.152 defines "Federal action" as the part, portion, or phase of the non-Federal undertaking that requires a Federal permit. Preconstruction activities do not require an NRC permit/license. Therefore, emissions from preconstruction activities are not considered in this applicability analysis.

### **4.0 Applicability Analysis**

On July 10, 2009, NRC issued a request for additional information (RAI) requesting PPL provide estimates of ozone precursor (NO<sub>x</sub> and VOC) emissions associated with construction and operation of the proposed BBNPP (NRC 2009).

The PPL initially responded to the RAI in a December 13, 2011, submittal (PPL 2011). This submittal contained an estimate of the total VOC and NO<sub>x</sub> emissions from the proposed construction and operation of BBNPP. A revised response was submitted on January 20, 2012 (PPL 2012a). This response clarified fuel usage information and responded to a PA DEP request regarding emissions from small combustion units less than 50 horsepower (hp) in size. Refinements were made to the emissions estimation techniques.

In March 2012, PPL provided a second revision to the emissions estimates (PPL 2012b). This revision included emissions from small combustion units less than 50 hp in size, as requested by PA DEP. It also included updates to emission calculations for non-road diesel emissions.

The staff reviewed these emissions inventories. The applicant stated that the estimate of total VOC and NO<sub>x</sub> emissions was based on standard EPA methods (e.g., EPA's NONROAD2008a and MOVES2010a models and methodologies) consistent with 40 CFR 93.159(b) (PPL 2012b). The applicant also provided emissions on a project year basis, rather than a calendar year basis, to allow for future changes to its construction schedule.

The applicant's projected total of direct and indirect emissions of ozone precursors for the entire project are based on EPA-recommended emissions estimation techniques. The applicant's

engineering firm, Sargent & Lundy, developed a study of estimated fuel usage during construction of BBNPP (PPL 2012b). Sargent & Lundy included a list of assumptions in the fuel study; NRC staff considered these assumptions to be reasonable. The fuel study assumes that material and equipment manufactured outside of the United States would arrive at a port in the Baltimore, Maryland or Pennsylvania area. Concrete is assumed to be produced at a batch plant onsite. All cut and excavated soil will be disposed of onsite, which reduces fuel consumption and estimated equipment emissions. Fuel usage quantities were developed from preliminary construction sequence estimates, typical construction equipment usage, and power plant construction experience in the absence of detailed design information for BBNPP (PPL 2012b). Each major phase of construction was identified (early site preparation, site development and excavation, concrete structural work, etc.) and equipment needed to perform each phase was identified (soil compactor, crane, grader, etc.). Operating hours for each piece of equipment to perform each phase were estimated and found by NRC staff to be reasonable. Operating hours were multiplied by the fuel usage rate for each type of equipment. The total fuel usage for each piece of equipment within each phase was then portioned among the seven construction years, based on what activities within that phase would be performed each year. The portion of the building activities that are NRC-authorized construction were estimated by Sargent & Lundy as follows (PPL 2012b):

**Table 1. Percentages of Activities for Building BBNPP that are within NRC Jurisdictional Authority**

Type of Activity	Percent
Structural Concrete	50%
Switchyard	25%
Superstructure and Structural Steel	40%
Mechanical and Electrical Installation	50%
Soil Compaction for Powerblock	10%
Cooling Tower	10%
Major Equipment (heavy) Lift and Movement	75%

(PPL 2012b)

These values were multiplied by the total estimated fuel usage for an activity to determine the fuel usage for the NRC-authorized portion of that activity. Equipment listed in the Sargent & Lundy fuel study was matched with the steady-state emission factors and load factors in EPA's NONROAD2008a data files, and emissions for non-road equipment were then estimated using NONROAD2008a model and methodology (PPL 2012b).

For the purpose of a conservative assessment of emissions estimates, PPL assumed that all equipment to be used is fully deteriorated (PPL 2012b). The applicant assumed that all equipment would meet EPA Tier III engine emissions requirements (PPL 2012b). NRC staff found this to be consistent with similar submittals from other applicants. The NRC determined that the list of equipment used in the emissions inventory is not unreasonable given the level of detail known at this time.

On-road vehicle emissions were calculated using EPA's MOVES2010a model. This category of emissions includes workforce commuting and commercial and construction deliveries during the building period. PA DEP supplied data files to the applicant containing specific information for Luzerne County (meteorological data, vehicle age distribution, etc.). The Sargent & Lundy fuel study contained data for a number of vehicle trips and hours of operation. The applicant also estimated vehicle startup emissions in addition to vehicle operation emissions.

Because PA DEP included the BBNPP total project emissions into its most recent 8-hour ozone SIP revision (PA DEP 2012), and the NRC-authorized emissions are a portion of the total emissions, this section discusses both the entire project's emissions and the portion of those emissions attributable to the NRC's Federal action of issuing a COL.

### **Direct and Indirect Emissions of VOC (Year 1-7)**

The NRC evaluated PPL's emissions inventory and found that the annual totals of direct and indirect VOC emissions for the entire project are below the applicable Section 93.153(b) *de minimis* rate of 50 tpy. Based on PPL's building schedule and equipment inventory, the highest emission rate, estimated at 13.8 tons VOC, is projected to occur in Year 2 of the project (PPL 2012b). Emissions caused by the proposed NRC Federal action of issuing a COL that authorizes specific construction activities make up a portion of this total value. Since the total value is less than the applicable Section 93.153(b) *de minimis* rate for VOC, the portion for NRC-authorized construction activities is necessarily also less than the applicable Section 93.153(b) *de minimis* rate for VOC. Therefore, a conformity determination is not required for VOC emissions.

### **Direct and Indirect Emissions of NO<sub>x</sub> (Year 1-7)**

The NRC evaluated PPL's emissions inventory for NO<sub>x</sub>. Tables 2 and 3 show the sources of the total of direct and indirect emissions of NO<sub>x</sub> for each year that building activities would occur for the entire project and for the portion of the emissions attributable to NRC-authorized construction activities, respectively. Most of the building activities occurring during the first two years are preconstruction activities (site clearing, grading); therefore, the NRC-authorized emissions during the first two years are lower. As discussed in Section 3.0, there are no indirect emissions attributable to NRC's Federal action; therefore, the Table 3 totals consist only of direct emissions. However, the direct emissions of NO<sub>x</sub> caused by the NRC-authorized construction activities are less than the applicable Section 93.153(b) *de minimis* rate for NO<sub>x</sub>. Therefore, a conformity determination is not required for NO<sub>x</sub> emissions.



**Table 2. Total Annual Direct and Indirect Emissions Estimates of NO<sub>x</sub> for Building BBNPP (Tons per year)**

Year	Nonroad Diesel	Small Combustion	Workforce Commuting	Comm. and Constr. Deliveries	On-site on-road mobile engines	Total
1	123.1	6.4	1.0	1.4	1.6	133.5*
2	121.8	7.7	3.7	25.5	3.8	162.6*
3	81.7	6.3	11.4	27.2	5.7	132.2*
4	80.5	5.8	22.3	7.9	5.2	121.6*
5	38.0	3.4	22.3	4.3	3.7	71.7
6	14.3	1.5	11.7	2.4	1.4	31.2
7	17.5	1.2	2.3	2.3	1.2	24.5

\*Total of direct and indirect emissions exceeds the 100 tons per year *de minimis* rate in 40 CFR 93.153(b) (PPL 2012b).

**Table 3. Total Annual Direct and Indirect Emissions Estimates of NO<sub>x</sub> for NRC-authorized Construction of BBNPP (Tons per year)**

Year	Nonroad Diesel	Small Combustion	Workforce Commuting	Comm. and Constr. Deliveries	On-site on-road mobile engines	Total
1	0.1	0.0	0	0	0	0.1
2	4.1	0.2	0	0	0.8	5.1
3	15.8	0.8	0	0	0.9	17.6
4	29.3	1.5	0	0	0.7	31.5
5	13.2	0.7	0	0	0.5	14.4
6	4.6	0.2	0	0	0.2	5.0
7	3.4	0.2	0	0	0.2	3.8

In October 2013, the PA DEP issued a *State Implementation Plan Revision: NO<sub>x</sub> Motor Vehicle Emission Budget Revisions Based on the MOVES2010a Model; and General Conformity Budget for Bell Bend Nuclear Power Plant* for the Scranton/Wilkes-Barre Eight-Hour Ozone Maintenance Area for the 1997 Ozone National Ambient Air Quality Standard. This revised SIP was issued for comment in November 2013 and issued as final after EPA approval in June 2015. The SIP accounts for the total projected NO<sub>x</sub> emissions from BBNPP of 162.6 tons during the peak building year by including a budget of 201.0 tons of NO<sub>x</sub> per calendar year for building BBNPP. Including the total project emissions in a SIP is one way to demonstrate conformity per 40 CFR 93.158.

## 5.0 Conclusion

Based on the results of the applicability analysis described above, the NRC expects that the total emissions associated with building BBNPP would exceed the *de minimis* threshold for NO<sub>x</sub> during years 1 through 4 of the project as seen in Table 2. The peak total of emissions is 162.6 tons NO<sub>x</sub> in Year 2. The NRC expects that emissions associated with the NRC-authorized construction activities would be below the *de minimis* rate in Section 93.153(b) for NO<sub>x</sub> as seen in Table 3. PA DEP included the total project emissions in its 2013 SIP

revision, a portion of those emissions are attributable to NRC-authorized activities. Because emissions from NRC-authorized construction activities are below the *de minimis* rate in Section 93.153(b) for NO<sub>x</sub>, and because the entire project emissions are included in the SIP, the NRC staff has determined that a conformity determination is not required.

## 6.0 References

10 CFR Part 50. Code of Federal Regulations, Title 10, *Energy*, Part 50, “Domestic Licensing of Production and Utilization Facilities.”

10 CFR Part 51. Code of Federal Regulations, Title 10, *Energy*, Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.”

10 CFR Part 52. Code of Federal Regulations, Title 10, *Energy*, Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants.”

40 CFR Part 51. Code of Federal Regulations, Title 40, *Protection of Environment*, Part 51, “Requirements for Preparation, Adoption, and Submittal of Implementation Plans.”

40 CFR Part 81. Code of Federal Regulations, Title 40, *Protection of Environment*, Part 81, “Designation of Areas for Air Quality Planning Purposes.”

40 CFR Part 93. Code of Federal Regulations, Title 40, *Protection of Environment*, Part 93, “Determining Conformity of Federal Actions to State or Federal Implementation Plans.”

58 FR 63227. 1993. “Determining Conformity of General Federal Actions to State or Federal Implementation Plans.” *Federal Register*. U.S. Environmental Protection Agency.

72 FR 57416. October 9, 2007. “Limited Work Authorizations for Nuclear Power Plants.” *Federal Register*. U.S. Nuclear Regulatory Commission.

80 FR 34063. June 15, 2015. “Approval and Promulgation of Air Quality Implementation Plans; Pennsylvania; Update of the Motor Vehicle Emissions Budgets and General Conformity Budgets for the Scranton/Wilkes-Barre 1997 8-Hour Ozone National Ambient Air Quality Standard Maintenance Area.” *Federal Register*. U.S. Environmental Protection Agency.

Atomic Energy Act of 1954, as amended. 42 U.S.C. 2011, *et seq.*

Clean Air Act, as amended. 42 U.S.C. 7506 *et seq.*

Pennsylvania Department of Environmental Protection (PA DEP). 2012. Letter from J. Epps, Bureau of Air Quality, to G. Petrewski, PPL Nuclear Development, LLC, March 6, 2012. Accession No. ML12096A083.

PPL Bell Bend, LLC (PPL). 2011. Letter from R.Sgarro, PPL Bell Bend, LLC, to NRC, “Final Response to Environmental Requests for Additional Information TE 4.3-1, TE 4.3-2, TE 4.3-7, TE 4.3-10, MET 2.7-1, LU 4.1-1, LU 5.1-1 and LU 5.1-2”. December 13, 2011. Accession No. ML113550181.

PPL Bell Bend, LLC (PPL). 2012a. Letter from R.Sgarro, PPL Bell Bend, LLC, to NRC, “Revised Response to Environmental Request for Additional Information MET 2.7-1”. January 20, 2012. Accession No. ML120310490.

PPL Bell Bend, LLC (PPL). 2012b. Letter from R.Sgarro, PPL Bell Bend, LLC, to NRC, “Revised Response to Environmental Request for Additional Information MET 2.7-1: Air Conformity Report, Revision 2”. March 14, 2012. Accession No. ML120820274.

PPL Bell Bend, LLC (PPL). 2013. *Bell Bend Nuclear Power Plant Combined License Application, Part 3, Environmental Report*. Revision 4, Baltimore, Maryland. Accession No. ML13120A411.

U.S. Nuclear Regulatory Commission (NRC). 2009. Letter from S. Imboden (NRC) to R. Sgarro (PPL Bell Bend, LLC), “Subject: Requests for Additional Information Related to the Environmental Review for the Combined License Application for Bell Bend Nuclear Power Plant.” July 10, 2009, Washington, D.C. Accession No. ML091620600.

## **7.0 Glossary (adapted from 40 CFR 93.152)**

*Applicability analysis* is the process of determining if a Federal action must be supported by a conformity determination.

*Applicable implementation plan or applicable State Implementation Plan (SIP)* means the portion (or portions) of the SIP or most recent revision thereof, which has been approved under Section 110(k) of the CAA, a Federal implementation plan promulgated under Section 110(c) of the CAA, or a plan promulgated or approved pursuant to Section 301(d) of the CAA (Tribal implementation plan or TIP) and which implements the relevant requirements of the CAA.

*Cause or contribute to a new violation* means a Federal action that:

1. Causes a new violation of a NAAQS at a location in a nonattainment or maintenance area which would otherwise not be in violation of the standard during the future period in question if the Federal action were not taken; or
2. Contributes, in conjunction with other reasonably foreseeable actions, to a new violation of a NAAQS at a location in a nonattainment or maintenance area in a manner that would increase the frequency or severity of the new violation.

*Caused by*, as used in the terms “direct emissions” and “indirect emissions,” means emissions that would not otherwise occur in the absence of the Federal action.

*Conformity determination* is the evaluation (made after an applicability analysis is completed) that a Federal action conforms to the applicable implementation plan and meets the requirements of 40 CFR 93, Subpart B.

*Conformity evaluation* is the entire process from the applicability analysis through the conformity determination that is used to demonstrate that the Federal action conforms to the requirements of 40 CFR 93, Subpart B.

*Continuing program responsibility* means a Federal agency has responsibility for emissions caused by:

1. Actions it takes itself; or

2. Actions of non-Federal entities that the Federal agency, in exercising its normal programs and authorities, approves, funds, licenses or permits, provided the agency can impose conditions on any portion of the action that could affect the emissions.

*Continuous program to implement* means that the Federal agency has started the action identified in the plan and does not stop the actions for more than an 18-month period, unless it can demonstrate that such a stoppage was included in the original plan.

*Criteria pollutant or standard* means any pollutant for which there is established a NAAQS at 40 CFR part 50.

*Direct emissions* means those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable.

*Emergency* means a situation where extremely quick action on the part of the Federal agencies involved is needed and where the timing of such Federal activities makes it impractical to meet the requirements of 40 CFR 93, Subpart B, such as natural disasters like hurricanes or earthquakes, civil disturbances such as terrorist acts and military mobilizations.

*Emission inventory* means a listing of information on the location, type of source, type and quantity of pollutant emitted as well as other parameters of the emissions.

*Emissions budgets* are those portions of the applicable SIP's projected emission inventories that describe the levels of emissions (mobile, stationary, area, etc.) that provide for meeting reasonable further progress milestones, attainment, and/or maintenance for any criteria pollutant or its precursors.

*Emissions offsets*, for purposes of 40 CFR 93.158, are emissions reductions which are quantifiable, consistent with the applicable SIP attainment and reasonable further progress demonstrations, surplus to reductions required by, and credited to, other applicable SIP provisions, enforceable at both the State and Federal levels, and permanent within the timeframe specified by the program.

*Federal action* means any activity engaged in by a department, agency, or instrumentality of the Federal government, or any activity that a department, agency or instrumentality of the Federal government supports in any way, provides financial assistance for, licenses, permits, or approves, other than activities related to transportation plans, programs, and projects developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 *et seq.*). Where the Federal action is a permit, license, or other approval for some aspect of a non-Federal undertaking, the relevant activity is the part, portion, or phase of the non-Federal undertaking that requires the Federal permit, license, or approval.

*Federal agency* means, for purposes of 40 CFR 93 Subpart B, a Federal department, agency, or instrumentality of the Federal government.

*Increase the frequency or severity of any existing violation of any standard in any area* means to cause a nonattainment area to exceed a standard more often or to cause a violation at a greater concentration than previously existed and/or would otherwise exist during the future period in question, if the project were not implemented.

*Indirect emissions* means those emissions of a criteria pollutant or its precursors:

1. That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action;
2. That are reasonably foreseeable;
3. That the agency can practically control; and
4. For which the agency has continuing program responsibility.

For the purposes of this definition, even if a Federal licensing, rulemaking or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting emissions.

*Maintenance area* means an area that was designated as nonattainment and has been re-designated in 40 CFR part 81 to attainment, meeting the provisions of Section 107(d)(3)(E) of the CAA and has a maintenance plan approved under Section 175A of the CAA.

*Maintenance plan* means a revision to the applicable SIP, meeting the requirements of section 175A of the CAA.

*Metropolitan Planning Organization (MPO)* means the policy board of an organization created as a result of the designation process in 23 U.S.C. 134(d).

*Mitigation measure* means any method of reducing emissions of the pollutant or its precursor taken at the location of the Federal action and used to reduce the impact of the emissions of that pollutant caused by the action.

*National ambient air quality standards (NAAQS)* are those standards established pursuant to Section 109 of the CAA and include standards for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>).

*Nonattainment area* means an area designated as nonattainment under section 107 of the Clean Air Act and described in 40 CFR Part 81.

*Precursors of a criteria pollutant* are:

1. For ozone, nitrogen oxides (NO<sub>x</sub>), unless an area is exempted from NO<sub>x</sub> requirements under section 182(f) of the CAA, and volatile organic compounds (VOC).
2. For PM<sub>10</sub>, those pollutants described in the PM<sub>10</sub> nonattainment area applicable SIP as significant contributors to the PM<sub>10</sub> levels.
3. For PM<sub>2.5</sub>:
  - (i) Sulfur dioxide (SO<sub>2</sub>) in all PM<sub>2.5</sub> nonattainment and maintenance areas,
  - (ii) Nitrogen oxides in all PM<sub>2.5</sub> nonattainment and maintenance areas unless both the State and EPA determine that it is not a significant precursor, and

- (iii) Volatile organic compounds (VOC) and ammonia (NH<sub>3</sub>) only in PM<sub>2.5</sub> nonattainment or maintenance areas where either the State or EPA determines that they are significant precursors.

*Reasonably foreseeable emissions* are projected future direct and indirect emissions that are identified at the time the conformity determination is made; the location of such emissions is known and the emissions are quantifiable as described and documented by the Federal agency based on its own information and after reviewing any information presented to the Federal agency.

*Take or start the Federal action* means the date that the Federal agency signs or approves the permit, license, grant or contract or otherwise physically begins the Federal action that requires a conformity evaluation under 40 CFR 93 Subpart B.

*Total of direct and indirect emissions* means the sum of direct and indirect emissions increases and decreases caused by the Federal action; i.e., the “net” emissions considering all direct and indirect emissions. The portion of emissions which are exempt or presumed to conform under Section 93.153 (c), (d), (e), or (f) are not included in the “total of direct and indirect emissions.” The “total of direct and indirect emissions” includes emissions of criteria pollutants and emissions of precursors of criteria pollutants.

## 8.0 Acronyms

AEA	Atomic Energy Act of 1954
BBNPP	Bell Bend Nuclear Power Plant
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
COL	combined license
EPA	U.S. Environmental Protection Agency
GCD	General Conformity Determination
hp	horsepower
mi	miles
MOVES	Motor Vehicle Emission Simulator
NAAQS	National Ambient Air Quality Standards
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxide(s)
NRC	U.S. Nuclear Regulatory Commission
NSR	New Source Review
O <sub>3</sub>	ozone
PA DEP	Pennsylvania Department of Environmental Protection
Pb	lead
PM <sub>2.5</sub>	particulate matter with a diameter of 2.5 microns or less
PM <sub>10</sub>	particulate matter with a diameter of 10 microns or less
PPL	PPL Bell Bend, LLC
RAI	request(s) for additional information
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SSC	structures, systems, or components
SSES	Susquehanna Steam Electric Station
tpd	tons per day
tpy	tons per year
VOC	volatile organic compound(s)