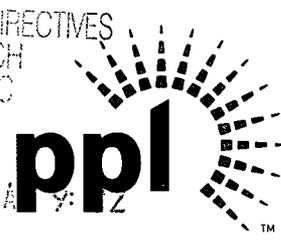


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RULES AND DIRECTIVES  
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8/21/07  
72FR 46670



**SUSQUEHANNA STEAM ELECTRIC STATION  
DRAFT ENVIRONMENTAL ASSESSMENT AND FINDING OF NO  
SIGNIFICANT IMPACT RELATED TO PROPOSED EXTENDED POWER  
UPRATE (TAC NOS MD3309 AND MD 3310)  
PPL SUSQUEHANNA LLC COMMENTS  
PLA-6279**

**Docket Nos. 50-387  
and 50-388**

Reference: 1. Federal Register/Vol. 72 No. 16/Tuesday, August 21, 2007/Notices

The referenced Federal Register Notice provided for comment the "Susquehanna Steam Electric Station, Units 1 and 2; Draft Environmental Assessment and Finding of No Significant Impact Related to the Proposed License Amendment To Increase the Maximum Power Level".

The purpose of this letter is to provide PPL Susquehanna LLC comments. The comments are contained in the Enclosure.

If you have any questions or require additional information, please contact Mr. Michael H. Crowthers at (610) 774-7766.

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

Executed on: 9/19/2007

B. T. McKinney

Enclosure 1 - PPL Susquehanna LLC Comments

SONSI Review Complete  
Template = ADM-013

ERIDS = ADM-03  
Ode = R. Guzman  
(RVE)

Copy: NRC Region I  
Mr. R. V. Guzman, NRC Sr. Project Manager  
Mr. R. R. Janati, DEP/BRP  
Mr. F. W. Jaxheimer, NRC Sr. Resident Inspector

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**Enclosure 1 to PLA-6279**  
**PPL Susquehanna LLC Comments**

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Note - The following comments are identified on the appropriate Draft Environmental Assessment and Finding of No Significant Impact Federal Register Notice (hereafter the "assessment") pages that follow.

**Comment 1:**

Replace the crossed out sentences on assessment page 2 with the below to be consistent with Section 2.1 of Reference 10 in the assessment:

“This land on the west side of the river is about 1,573 acres and Gould Island, a 65-acre island just north of SSES on the Susquehanna River is jointly owned between PPL (90%) and Allegheny Electric Cooperative (10%). Also, PPL owns an additional 717 acres of mostly undeveloped land, which includes natural, recreational, and wildlife areas on the east side of the river (Reference 10).”

**Comment 2:**

The information provided below should have been provided in assessment Reference 9. The assessment Reference 9 information is inaccurate. Replace the crossed out text on assessment page 4 with the below.

“with the exception of 42.3 miles of the 44.2 mile Sunbury – Susquehanna #2 500-kV line which is owned by Allegheny Electric Cooperative. All of these lines however, are integral to the larger transmission system, and as such PPL Electric Utilities plans to operate and maintain these lines indefinitely.”

**Comment 3:**

The text on assessment page 4 is revised in the attached mark-up to reflect the current implementation schedule.

**Comment 4:**

Suggest the following be added to assessment page 6:

“An above ground shielded storage facility will be constructed onsite within the Protected Area to store the original steam dryers.”

This shielded storage facility was addressed in PPL response to NRC question 6 in PPL letter to NRC PLA-6194 dated May 9, 2007.

**Comment 5:**

Table 1 on page 19 should be revised to agree with the Table 7-1 of assessment Reference 9.

**Comment 6:**

Taxes paid to Berwick Area School District, Luzerne County, and Salem Township could go up due to EPU.

PPL Susquehanna, LLC does pay taxes to Berwick Area School District, Luzerne County, and Salem Township. Any discussions on in-lieu-of-tax payments should be deleted.

**Comment 7:**

On assessment page 25, ".0002" should be ".0003". See Table 8-2 of assessment Reference 9.

**Comment 8:**

"20 percent" should be "12 percent" on assessment page 28. See PPL Letter to NRC PLA-6172 dated March 22, 2007 page 2.

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## ENVIRONMENTAL ASSESSMENT

### Plant Site and Environs:

SSES is located just west of the Susquehanna River approximately 5 miles northeast of Berwick, in Luzerne County, Pennsylvania. In total, SSES majority owner and licensed operator, PPL Susquehanna, LLC (PPL, the licensee), owns 2,355 acres of land on both sides of the Susquehanna River. Generally, this land is characterized by open deciduous woodlands interspersed with grasslands and orchards. Approximately 487 acres are used for generation facilities and associated maintenance facilities, laydown areas, parking lots, and roads. Approximately 130 acres are leased to local farmers. PPL maintains a 401-acre nature preserve, referred to as the Susquehanna Riverlands, which is located between SSES and the river; US Route 11 separates the Susquehanna Riverlands from the plant site. ~~West of the Susquehanna River, PPL and Allegheny Electric Cooperative jointly own 717 acres of mostly undeveloped land, which includes natural, recreational, and wildlife areas. Additionally, PPL and Allegheny Electric Cooperative own Gould Island, a 65-acre island just north of SSES on the Susquehanna River (Reference 10).~~ (1)

SSES is a two-unit plant with General Electric boiling-water reactors and generators. NRC approved the Unit 1 operating license on July 17, 1982, and commercial operation began June 8, 1983. The Unit 2 operating license was issued on March 3, 1984, and commercial operation began February 12, 1985. Units 1 and 2 both currently operate at 3,489 MWt (Reference 8). The units share a common control room, refueling floor, turbine operating deck, radwaste system, and other auxiliary systems (Reference 9).

SSES uses a closed-cycle heat dissipation system (two natural-draft cooling towers) to transfer waste heat from the circulating water system to the atmosphere. The circulating water and the service water systems draw water from, and discharge to, the Susquehanna River.

(2)  
-4-

PPL Electric Utilities ~~and are integral to the larger transmission system, and as such, PPL Electric Utilities plans to maintain these lines indefinitely.~~ Except for the short ties on the plant site, the lines would likely remain a permanent part of the transmission system even after SSES is decommissioned (Reference 10).

Identification of the Proposed Action:

By letter dated October 11, 2006, PPL proposed amendments to the operating licenses for SSES Units 1 and 2 to increase the maximum thermal power level of both units by approximately 13 percent thermal power, from 3,489 MWt to 3,952 MWt (Reference 8). The change is considered an EPU because it would raise the reactor core power level more than 7 percent above the original licensed maximum power level. This amendment would allow the heat output of the reactor to increase, which would increase the flow of steam to the turbine. This would result in the increase in production of electricity and the amount of waste heat delivered to the condenser, and an increase in the temperature of the water being discharged to the Susquehanna River.

PPL plans to implement the proposed EPU in two phases to obtain optimal fuel utilization and to ensure that manageable core thermal limits are maintained. The core thermal power level of Unit 2 would be increased by approximately <sup>13</sup> percent <sup>following</sup> during the spring 2007/9 refueling outage, ~~and the remaining 7 percent during the spring 2009 refueling outage.~~ Unit 1's core thermal power level would ~~also~~ be increased in two stages of about 7 percent each during the spring 2008 and spring 2010 refueling outages (Reference 8).

The original operating licenses for Units 1 and 2 authorized operation up to a maximum power level of 3,293 MWt per unit. Since the units went online, SSES has implemented two power uprates. Stretch uprates (4.5 percent each) were implemented in 1994 (Unit 2) and 1995 (Unit 1), increasing the licensed thermal power levels of SSES Units 1 and 2 from 3,293 MWt to 3,441 MWt. Two separate NRC environmental assessments each resulted in a finding of no

(3)

-6-

Environmental Impacts of the Proposed Action:

At the time of issuance of the operating licenses for SSES, the staff noted that any activity authorized by the licenses would be encompassed by the overall action evaluated in the Final Environmental Statement (FES) for the operation of SSES, which was issued by the NRC in June 1981. This Environmental Assessment summarizes the radiological and non-radiological impacts in the environment that may result from the proposed action.

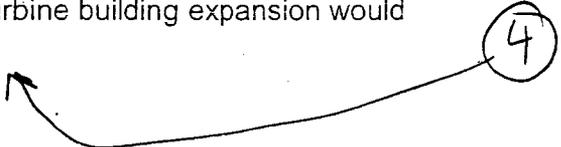
**NON-RADIOLOGICAL IMPACTS**

Land Use Impacts:

Potential land use impacts due to the proposed EPU include impacts from construction and plant modifications at SSES. While some plant components would be modified, most plant changes related to the proposed EPU would occur within existing structures, buildings, and fenced equipment yards housing major components within the developed part of the site. No new construction would occur outside of existing facilities, and no expansion of buildings, roads, parking lots, equipment storage areas, or transmission facilities would be required to support the proposed EPU with the following exceptions.

The 230-kV switchyard located on PPL property across the river from the station, and the 500-kV switchyard located on the plant site would both be expanded to house additional capacitor banks. The site road adjacent to the 500-kV switchyard would be moved to accommodate this expansion. Both switchyard modifications would require no land disturbance outside the power block area. Relocation of the road adjacent to the 500-kV switchyard would occur in a previously developed area of the plant site, resulting in no or little impact to land use. In addition, the turbine building may be expanded to allow for the installation of condensate filters, and additional aboveground storage tanks may be required to support cooling tower basin acid injection. If required, storage tank installation and turbine building expansion would be located in the developed part of the site (Reference 8, 9).

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and its associated transmission line corridors. Informal consultation with FWS Pennsylvania Field Office regarding the proposed EPU's potential impact on threatened or endangered species is ongoing.

Four species listed as threatened or endangered under the Endangered Species Act and 24 species that are listed by the Commonwealth of Pennsylvania as threatened or endangered occur within the counties where SSES and its associated transmission line corridors are located. These species are listed below in Table 1.

Table 1. Endangered and Threatened Species That Could Occur in the Vicinity of SSES or in Counties Crossed by SSES Transmission Lines

Scientific Name	Common Name	Federal Status*	State Status*
<b>Mammals</b>			
<i>Neotoma magister</i>	Allegheny woodrat	-	T
<i>Myotis sodalis</i>	Indiana bat	E	E
<i>Myotis leibii</i>	Small-footed myotis	-	T
<i>Sciurus niger</i>	Eastern fox squirrel	-	T
<b>Birds</b>			
<i>Ardia alba</i>	Great egret	-	E
<i>Asio flammeus</i>	Short-eared owl	-	E
<i>Bartramia longicauda</i>	Upland sandpiper	-	T
<i>Botaurus lentiginosus</i>	American bittern	-	E
<i>Chlidonias niger</i>	Black tern	-	E
<i>Cistothorus platensis</i>	Sedge wren	-	T
<i>Falco peregrinus</i>	Peregrine falcon	-	E
<i>Haliaeetus leucocephalus</i>	Bald eagle	T	E
<i>Ixobrychus exilis</i>	Least bittern	-	E
<i>Pandion haliaetus</i>	Osprey	-	T
<b>Reptiles</b>			
<i>Clemmys muhlenbergii</i>	Bog Turtle	T	E
<b>Invertebrates</b>			

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~~The proposed EPU could affect the in-lieu-of-tax payments because the total amount of tax money to be distributed would increase as power generation increases and because the~~ (6)  
proposed EPU<sup>S</sup> would increase SSES's value, thus resulting in a larger allocation of the payment to the Berwick Area School District, Luzerne County, and Salem Township. Because the proposed EPU would increase the economic viability of SSES, the probability of early plant retirement would be reduced. Early plant retirement would be expected to have negative impacts on the local economy and the community by reducing ~~in-lieu-of~~ tax payments and limiting local employment opportunities for the long term (Reference 9). (6)

Since the proposed EPU would not have any measurable effect on the annual earnings and income in Luzerne and Columbia Counties or on community services and due to the lack of significant environmental impacts on minority or low-income populations, there would be no significant socioeconomic or environmental justice impacts associated with the proposed EPU. Conversely, the proposed EPU could have a positive effect on the regional economy because of the potential increase in the ~~in-lieu-of~~ tax payments received by the Berwick Area School District, Luzerne County, and Salem Township, due to the potential increase in the book value of SSES, and the increased long-term viability of SSES. (6)

Summary:

The proposed EPU would not result in a significant change in non-radiological impacts in the areas of land use, water use, cooling tower operation, terrestrial and aquatic biota, transmission facility operation, or social and economic factors. No other non-radiological impacts were identified or would be expected. Table 2 summarizes the non-radiological environmental impacts of the proposed EPU at SSES.

Table 2: Summary of Non-Radiological Environmental Impacts

<b>Land Use</b>	No significant land-use modifications.
<b>Non-Radiological Waste</b>	Any additional hazardous and non-hazardous waste as a result of the proposed EPU would continue to be regulated by RCRA and managed by SSES's waste management program.
<b>Cooling Tower</b>	Impacts associated with continued cooling tower operation following the proposed EPU, including noise, fogging, cloud cover, salt drift, and icing would not change significantly from current impacts.
<b>Transmission Facilities</b>	No physical modifications to transmission lines; lines meet electrical shock safety requirements; no changes to transmission line corridor maintenance; small increase in electrical current would cause small increase in electromagnetic field around transmission lines; no changes to voltage.
<b>Water Use</b>	No configuration change to intake structure; increase in cooling water flow rate; increase in consumptive use due to evaporation; SRBC would continue to regulate consumptive water usage at SSES.
<b>Discharge</b>	Small increase in discharge temperature and volume; no increases in other effluents; discharge would remain within Pennsylvania water quality limits, and SSES would continue to operate under NPDES permit regulations.
<b>Aquatic Biota</b>	Small increases in entrainment and impingement are not expected to affect the Susquehanna River aquatic biota; increase in volume and temperature of thermal discharge would remain within original FES guidelines and below Pennsylvania Code Section 93.7 temperature limits; SSES would continue to operate under NPDES permit regulations with regard to entrainment and impingement.
<b>Terrestrial Biota</b>	No land disturbance or changes to transmission line corridor maintenance are expected; therefore, there would be no significant effects on terrestrial species or their habitat.
<b>Threatened and Endangered Species</b>	As evaluated for aquatic and terrestrial biota, no significant impacts are expected on protected species or their habitat.
<b>Social and Economic</b>	No change in size of SSES labor force required for plant operation or for planned outages; proposed EPU could increase <del>in lieu of tax</del> payments to Luzerne County and book value of SSES; there would be no disproportionately high and adverse impact on minority and low-income populations.

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-25-

Part 50. Therefore, the staff concludes the increase in offsite dose due to gaseous effluent release following implementation of the proposed EPU would not be significant.

Liquid Radioactive Waste and Offsite Doses:

During normal operation, the liquid effluent treatment system processes and controls the release of radioactive liquid effluents to the environment, such that the dose to individuals offsite are maintained within the limits of 10 CFR Part 20 and the design objectives of Appendix I to 10 CFR Part 50. The liquid radioactive waste system is designed to process and purify the waste and then recycle it for use within the plant, or to discharge it to the environment as radioactive liquid waste effluent in accordance with facility procedures which comply with Commonwealth of Pennsylvania and Federal regulations. The single year highest radioactive liquid releases, for the time period 2000-2005 were: 2005 at 1,470,000 gallons, 2003 with 70.25 Curies of tritium, 2000 with 36.95 Curies of fission and activation products, and 2002 with 0.0007 Curies of dissolved and entrained gases (Reference 9).

<sup>3</sup> Even though the EPU would produce a larger amount of radioactive fission and activation products and a larger volume of liquid to be processed, the licensee performed an evaluation which shows that the liquid radwaste treatment system would remove all but a small amount of the increased radioactive material. The licensee estimated that the volume of radioactive liquid effluents released to the environment and the amount of radioactive material in the liquid effluents would increase slightly (less than 1 percent) due to the proposed EPU. Based on experience from EPUs at other plants, the staff concludes that this is an acceptable estimate. The dose to a member of the public from the radioactive releases described above, increased by 1 percent, would still be well within the radiation standards of 10 CFR Part 20 and the design objectives of Appendix I to 10 CFR Part 50. Therefore, the staff concludes that there would not be a significant environmental impact from the additional amount of radioactive material generated following implementation of the proposed EPU.

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dose would be in the range of 200 person-rem, roughly ~~20~~ percent higher than the current dose of 182 person-rem in 2005 and 184 person-rem in 2006 (Reference 9). Based on experience from EPU's at other plants, the staff concludes that these estimates are acceptable. The staff notes that SSES is allowed a maximum of 3,200 person-rem per year as provided in the 1981 Final Environmental Statement - Operating Stage. Therefore, the staff concludes that the increase in occupational exposure would not be significant.

Direct Radiation Doses Offsite:

Offsite radiation dose consists of three components: gaseous, liquid, and direct gamma radiation. As previously discussed under the Gaseous Radiological Waste and Liquid Radiological Waste sections, the estimated doses to a member of the public from radioactive gaseous and liquid effluents after the proposed EPU is implemented, would be well within the dose limits of 10 CFR Part 20 and the design objectives of Appendix I to 10 CFR Part 50.

The final component of offsite dose is from direct gamma radiation from radioactive waste stored temporarily onsite, including spent fuel in dry cask storage, and radionuclides (mainly nitrogen-16) in the steam from the reactor passing through the turbine system. The high energy radiation from nitrogen-16 is scattered or reflected by the air above the facility and represents an additional public radiation dose pathway known as "skyshine." The licensee estimated that the offsite radiation dose from skyshine would increase linearly with the increase in power level from the proposed EPU (20 percent); more nitrogen-16 is produced at the higher EPU power, and less of the nitrogen-16 decays before it reaches the turbine system because of the higher rate of steam flow due to the EPU. The licensee's radiological environmental monitoring program measures radiation dose at the site boundary and in the area around the facility with an array of thermoluminescent dosimeters. The licensee reported doses ranging from 0.2 to 1.3 mrem per year for the time period 2000-2005. The licensee estimated that the