

July 7, 2006

LICENSEE: PPL, Susquehanna, LLC

FACILITY: Susquehanna Steam Electric Station, Units 1 and 2

SUBJECT: SUMMARY OF APRIL 5, 2006, CATEGORY 1 MEETING WITH  
PPL, SUSQUEHANNA, LLC TO DISCUSS THE LICENSEE'S SCHEDULE FOR  
LICENSE RENEWAL IN CONJUNCTION WITH AN EXTENDED POWER  
UPRATE LICENSE AMENDMENT REQUEST (TAC NOS. MC0547 AND MC0548)

On April 5, 2006, a public meeting was held between the U.S. Nuclear Regulatory Commission (NRC, or the staff), and representatives of PPL Susquehanna, LLC at the NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss PPL's approach and schedule for submitting an application for license renewal (LR) in conjunction with a request for a 14 percent (14%) extended power uprate (EPU) for Susquehanna Steam Electric Station (SSES), Units 1 and 2. A list of participants is provided as Enclosure 1.

PPL presented information on three areas related to the EPU license amendment request, Enclosure 2 provides a description of PPL's work organization for EPU and LR; Enclosure 3 provides SSES, Units 1 and 2, EPU implementation phases and planned modifications; and Enclosure 4 provides the mid-cycle EPU implementation impacts.

In addition, PPL provided a proposed schedule for license renewal application review based on the NRC's standard license renewal schedule as shown in Enclosures 5 and 6 respectively. The staff highlighted the major milestones for LR review. A follow up meeting will be scheduled in the near future. One member of the public was in attendance, representing the State of Pennsylvania.

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Please direct any inquiries to me at 301-415-1594 or [yks@nrc.gov](mailto:yks@nrc.gov). For inquiries related to the EPU amendment request, please contact Mr. Richard Guzman at 301-415-1030.

**/RA/**

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Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosures:  
As Stated

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**LIST OF PARTICIPANTS FOR  
MEETING WITH PENNSYLVANIA POWER LIGHT SUSQUEHANNA, LLC  
REGARDING PROPOSED LICENSE RENEWAL APPLICATION  
AND EXTENDED POWER UPRATE APPLICATION  
APRIL 5, 2006**

<u>PARTICIPANTS</u>	<u>AFFILIATION</u>
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Louise Lund	NRR/DLR
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Tom Alexion	NRR/DPR/PGCB
Quynh Nguyen	NRR/DPR/PGCB
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Thomas Scarbrough	NRC/NRR/DCI/CPTB
John Wu	NRC/NRR/DE/EEMB
Andy du Bouchet	NRC/NRR/DE/EEMB
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Bill Rogers	NRC/NRR/DE
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Roy Matthew	NRC/NRR/DLR/RLRC
Ralph Caruso	NRC/ACRS
Rocco R. Sgarro	PPL Susquehanna
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Michael B. Detamore	PPL Susquehanna
John M. Oddo	PPL Susquehanna
Michael S. Gorski	PPL Susquehanna
John J. Geosits	PPL Susquehanna
Brad Fuller	DEP Radiation Protection - Pennsylvania

Enclosure 1

## RC 361



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**Attachment 7 to PLA-6002**

**List of Planned Modifications**

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ATTACHMENT 7

PPL SUSQUEHANNA LLC  
SUSQUEHANNA STEAM ELECTRIC STATION (SSES)  
UNITS 1 AND 2

REQUEST FOR LICENSE AMENDMENT FOR  
EXTENDED POWER UPRATE OPERATION

LIST OF PLANNED MODIFICATIONS

The following is a list of planned modifications necessary to support Extended Power Uprate (EPU) for Susquehanna Steam Electric Station (SSES) Units 1 and 2.

This list is reorganized from the similar list in the EPU submittal to illustrate implementation sequencing.

Susquehanna Units 1 and 2 EPU Planned Modifications	
Modification	Description
<b>Pre-EPU Implementation Phase (U212RIO-2005 and U114RIO-2006)</b>	
Vibration/Acoustic Monitoring (Steam dryer monitoring instruments on Unit 1 Only)	<ul style="list-style-type: none"><li>• Install accelerometers on Main Steam, Reactor Recirculation, RHR and RWCU Lines for vibration monitoring</li><li>• Install instrumentation on main steam lines for steam dryer acoustic wave monitoring</li></ul>
Cross Around Relief Valve Set Point Change (Unit 1 Only)	<ul style="list-style-type: none"><li>• Revise setpoint for EPU conditions</li><li>• Revise design pressure of associated piping for EPU conditions</li><li>• Replace relief line expansion joints for EPU steam flow conditions</li></ul>
Reactor Feed Pump Seal Water (Unit 1 Only)	<ul style="list-style-type: none"><li>• Revise Temperature Control Valve settings per vendor recommendation</li><li>• Revise drain line vent piping for increased drain flow</li></ul>
Power Range Neutron Monitoring System (Unit 1 Only)	<ul style="list-style-type: none"><li>• Replace existing GE analog system with GE digital NUMAC system</li></ul> <p>[Provided for completeness only. NRC approval has been requested in a separate, prior submittal]</p>

Susquehanna Units 1 and 2 EPU Planned Modifications	
Modification	Description
<b>EPU Phase I Implementation (U213RIO-2007 and U115RIO-2008)</b>	
Ultimate Heat Sink (Non-Outage)	<ul style="list-style-type: none"> <li>• Install a second isolation valve, manually operated, in each of two Spray Pond Spray Header Bypass Lines to reduce effects of a single bypass line isolation valve failure-to-close under accident conditions.</li> <li>• Reduce number of large array nozzles to improve spray efficiency</li> </ul>
ESW to Fuel Pool Check Valve (Non-Outage)	<ul style="list-style-type: none"> <li>• Valve change to reduce mission dose for post-LOCA manual action</li> </ul>
ARTS/MELLLA (Unit 1 Non-Outage)	<ul style="list-style-type: none"> <li>• Revise the APRM flow-biased scram and rod block trip setpoints</li> </ul> <p>[Provided for completeness only. NRC approval has been requested in a separate, prior submittal]</p>
Vibration/Acoustic Monitoring (Unit 2 Only)	<ul style="list-style-type: none"> <li>• Install instrumentation on main steam lines for steam dryer acoustic wave monitoring</li> </ul>
Cross Around Relief Valve Set Point Change (Unit 2 Only)	<ul style="list-style-type: none"> <li>• Revise setpoint for EPU conditions</li> <li>• Revise design pressure of associated piping for EPU conditions</li> <li>• Replace relief line expansion joints for EPU steam flow conditions</li> </ul>
Reactor Feed Pump Seal Water (Unit 2 Only)	<ul style="list-style-type: none"> <li>• Revise Temperature Control Valve settings per vendor recommendation</li> <li>• Revise drain line vent piping for increased drain flow</li> </ul>
Power Range Neutron Monitoring System (Unit 2 Only)	<ul style="list-style-type: none"> <li>• Replace existing GE analog system with GE digital NUMAC system</li> </ul> <p>[Provided for completeness only. NRC approval has been requested in a separate, prior submittal]</p>
Neutron Monitoring System Settings	<ul style="list-style-type: none"> <li>• APRM Flow-biased SCRAM</li> <li>• APRM Flow-biased Rod Block</li> <li>• APRM Upscale Setdown SCRAM</li> <li>• APRM Upscale Setdown Rod Block</li> </ul>



<b>Susquehanna Units 1 and 2 EPU Planned Modifications</b>	
<b>Modification</b>	<b>Description</b>
Acid Injection	<ul style="list-style-type: none"> <li>• Provide additional acid injection capability for the Cooling Tower basin</li> </ul>
Reactor Feed Pump Suction Piping	<ul style="list-style-type: none"> <li>• Replace suction flanges, revise piping design pressure, revise relief valve setpoints</li> </ul>
Main Steam, Feedwater, and Extraction Steam Piping Supports	<ul style="list-style-type: none"> <li>• Revise piping supports as necessary for EPU conditions</li> </ul>
Gaseous Radwaste Recombiner Drain Piping	<ul style="list-style-type: none"> <li>• Revise drain piping for increased EPU flow conditions</li> </ul>
#3 FWH Emergency Dump Valves	<ul style="list-style-type: none"> <li>• Replace valves for EPU conditions.</li> </ul>
Power Distribution/Switchyard	<ul style="list-style-type: none"> <li>• Install new switchyard capacitor banks to meet PJM reactive power requirements for generators</li> <li>• Replace Unit 1 Sync Breaker and associated controls with a breaker having a higher amperage rating</li> <li>• Upgrade Unit 2 main transformers and change tap settings to meet EPU conditions</li> </ul>
Potential EQ Changes	<ul style="list-style-type: none"> <li>• As required for EPU environmental conditions</li> </ul>
Appendix R RHR Pump Logic Change	<ul style="list-style-type: none"> <li>• Logic change and raceway protection to eliminate fire-induced failure mechanisms</li> <li>• Provide cross-divisional cooling to RHR pump motor oil coolers</li> </ul>
FW Heaters	<ul style="list-style-type: none"> <li>• Changes to manage velocity and tube vibration issues at EPU conditions</li> </ul>
Potential Steam Dryer Changes	<ul style="list-style-type: none"> <li>• Reinforce steam dryer to mitigate structural loads at EPU conditions</li> </ul>
<b>EPU Phase II Implementation (U214RIO-2009 and U115RIO-2010)</b>	
FW Heaters	<ul style="list-style-type: none"> <li>• Additional changes to manage velocity and tube vibration issues at EPU conditions</li> </ul>
Reactor Feed Pump Turbines	<ul style="list-style-type: none"> <li>• Replace Reactor Feed Pump Turbines due to higher turbine speeds required at EPU conditions</li> <li>• Upgrade turbine speed controls and overspeed trip to digital controls</li> </ul>
Condensate Demineralizer	<ul style="list-style-type: none"> <li>• Install an 8<sup>th</sup> Condensate Demineralizer to maintain Condensate water quality under increased EPU flow conditions</li> </ul>
Condensate Filter	<ul style="list-style-type: none"> <li>• Install a 7<sup>th</sup> Condensate Filter to maintain Condensate water quality under increased EPU flow conditions</li> </ul>

### Mid Cycle EPU Implementation Impacts

- All pre-constant power pressure uprate (CPPU) implementation modifications can be pre-installed or installed on line with the exception of one modification.
- Current Technical Specifications will not support operation with the Standby Liquid Control (SLC) Modifications.
- An outage is required for implementation of SLC Modifications:
  - \* 8 hour limiting condition for operation (LCO) does not support draining and refilling boron storage tank.
  - \* 8 hour LCO does not support implementation of pump logic hardware changes.
  - \* Hardware implementation of pump logic changes in operating panels puts operating unit at risk of a transient.
- Other analytic **work arounds** require Pennsylvania Power Light to perform additional analysis which the NRC would need to review.
- Early approval of SLC Technical Specification changes would facilitate a smooth mid-cycle implementation of CPPU without the need for an additional outage.
- A mid-cycle implementation outage during peak demand has large financial implications.
- Operation with CPPU rated **high pressure** (HP) turbine results in a MWe loss at **the current licensed thermal power** operation creating additional financial implications.
- PPL Pre-Outage Decision Points
  - SLC Modification Installation based on projected receipt of Technical Specifications.
  - HP Turbine installation based on CPPU submittal review progress.

Activity ID	Orig	Early Start	Early Finish
K SSES License Renewal Application Review Schedule			
LFK000010	10/1SEP06	01SEP06	01SEP06
LFK000030	12/4SEP06	24SEP06	24SEP06
LFK000040	12/4SEP06	24SEP06	24SEP06
LFK000020	30/01SEP06	30SEP06	30SEP06
LFK000050	10/1OCT06	01OCT06	01OCT06
LFK000060	10/NOV06	10NOV06	10NOV06
LFK000070	10/DEC06	01DEC06	01DEC06
LFK000080	31/DEC06	14DEC06	14DEC06
LFK000100	12/4DEC06	24DEC06	24DEC06
LFK000090	13/15DEC06	20DEC06	20DEC06
LFK000110	5/01JAN07	12JAN07	12JAN07
LFK000120	12/JAN07	12JAN07	12JAN07
LFK000150	31/02JAN07	01FEB07	01FEB07
LFK000160	50/02JAN07	01MAR07	01MAR07
LFK000170	29/01FEB07	01MAR07	01MAR07
LFK000180	60/01FEB07	01APR07	01APR07
LFK000210	83/07FEB07	30APR07	30APR07
LFK000130	5/01MAY07	05MAY07	05MAY07
LFK000140	10/MAY07	05MAY07	05MAY07
LFK000173	5/01JUN07	05JUN07	05JUN07
LFK000176	10/JUN07	05JUN07	05JUN07
LFK000220	120/JUN07	20JUN07	20JUN07
LFK000230	127/JUN07	27JUN07	27JUN07
LFK000190	12/16JUL07	27JUL07	27JUL07
LFK000200	127JUL07	27JUL07	27JUL07
LFK000240	01SEP07	01SEP07	01SEP07
LFK000250	15OCT07	15OCT07	15OCT07
LFK000260	122OCT07	22OCT07	22OCT07
LFK000270	14NOV07	14NOV07	14NOV07
LFK000280	122NOV07	22NOV07	22NOV07
LFK000300	10/FEB08	01FEB08	01FEB08
LFK000320	10/MAR08	01MAR08	01MAR08
LFK000330	31/01FEB08	02MAR08	02MAR08
LFK000340	102MAR08	02MAR08	02MAR08
LFK000350	107JUN08	07JUN08	07JUN08
LFK000360	101AUG08	01AUG08	01AUG08
LFK000370	10SEP08	05SEP08	05SEP08
LFK000380	101OCT08	01OCT08	01OCT08

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LICENSE RENEWAL APPLICATION REVIEW SCHEDULE

<b>Milestone</b>	<b>Schedule</b>	<b>Actual</b>
Receive License Renewal (LR) Application *	09/01/06	
Federal Register Notice (FRN) Published - Receipt & Availability	09/08/06	
Public Information Meeting - LR Process & Safety Review Overview	09/08/06	
FRN Published - Acceptability/Opportunity for Hearing	09/21/06	
Audit - Aging Management Programs (AMPs) (1 week on-site)	11/13/06	
FRN Published - Intent/Environmental Scoping Meeting	11/17/06	
Audit - Scoping and Screening Methodology (1 week on-site)	11/20/06	
Public Exit Meeting - Scoping & Screening Methodology Audit	11/27/06	
Audit - Aging Management Reviews (AMRs) (1 week on-site)	12/11/06	
Environmental Site Audit (1 week on-site)	12/18/06	
Deadline for Filing Hearing Requests and Petitions for Intervention	01/05/07	
Public Meeting - Environmental Scoping	01/17/07	
Environmental Scoping Periods Ends	02/02/07	
Public Exit Meeting - AMP/AMR Audit	12/15/06	
Environmental Requests for Additional information (RAIs) - Issued	02/09/07	
Environmental RAIs - Responses Received	03/16/07	
Safety RAIs - Issued (Applicant response time = 30 days)	03/16/07	
Safety RAI - Responses Received	04/13/07	
Inspection - Scoping and Screening/AMP (2 weeks on-site)	04/16/07	
Public Exit Meeting - Scoping & Screening/AMP Inspections	05/11/07	
Draft Supplemental Environmental Impact Statement (SEIS) Issued	06/29/07	
FRN Published - Availability/Comment on draft SEIS	07/06/07	
Public Meeting - draft SEIS	07/13/07	
End of draft SEIS Comment Period	08/17/07	
Safety Evaluation Report (SER) with Open Item(s) - Issued	11/06/07	
ACRS Subcommittee Meeting on SER with Open Item(s)	12/06/07	
SER Open Item(s) - Response(s) Received	01/07/08	
Final SEIS - Issued	03/31/08	
FRN Published - Availability of Final SEIS	04/04/08	
Inspection - Optional	TBD	
SER - Issued	04/11/08	
FRN Published - Availability of Final SEIS	04/04/08	
ACRS Full Committee Meeting on SER	05/15/08	
Decision Director NRR (license issued, if approved and no hearing is granted 22	07/07/08	
Commission Decision (if hearing is granted - 30 months)	12/xx/08	

\* NRC assumption 9/1/06 for illustrative purposes

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**/RA/**

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Docket Nos. 50-387 and 50-388

Enclosures:  
As Stated

cc w/encls: See next page

Accession Number: **ML061720220**

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DATE	6/26/06	6/23/06	7/ 7 /06	6/30/06

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