RAS 13686

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Attn: Rulemaking and Adjudications Staff

In the matter of

PPL Susquehanna LLC Proposed Amendment Requests for the Susquehanna Steam Electric Station's 1 & 2 Would Increase Thermal Power to 3,952 Mega-Watts Which Is 20% Above the Original Rated Thermal Power (RTP) 3293 MWt, And Approximately 13% Above the Current RTP of 3,489 MWt, Docket Nos. 50-387 PLA-6110 and 50-388

Eric Joseph Epstein's Petition for Leave to Intervene, Request for Hearing, and Presentation of Contentions with Supporting Factual Data

Date: May 11, 2007

I. Introduction.

Eric Joseph Epstein ("Mr. Epstein" or "Epstein"), pursuant to 10 C.F.R. § 2.309 (d) and (e), petitions for Leave to Intervene, Request for Hearing, and Presentation of Contentions with Supporting Factual Data in response to the Notice of Opportunity for a Hearing relating to PPL Susquehanna LLC's Proposed Amendment Requests for the Susquehanna Steam Electric Station's 1 & 2 ("SSES" or "Susquehanna" or "the Company" or "the applicant") Would Increase Thermal Power to 3,953 Mega-Watts Which Is 20% Above the Original Rated Thermal Power (RTP) 3293 MWt, And Approximately 13% Above the Current RTP of 3,489 MWt, Docket Nos. 50-387 PLA-6110 and 50-388 as published in the Federal Register on March 13, 2007 (Vol. 72, No. 48), pp. 11392-1139.

Mr. Epstein also requests a hearing consistent with 10 C.F.R. § 2.309(a). Pursuant to 10 C.F.R. § 2.309(o), Epstein should be granted leave to intervene because he has standing; and, hereby submits three admissible contentions.

II. History of Proceeding

In September, 2005, PPL consummated a contract with General Electric to engage in uprate activities at the SSES:

> "A General Electric Co. subsidiary said Sept. 22 that it won a $10 million contract to increase the electric generating capacity of PPL Corp.'s two-unit Susquehanna nuclear plant by about 200 MW combined. This is part of an extended power uprate for the boiling water reactor units at the nuclear plant, near Berwick.
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> "Pa. PPL Corp. currently lists a generating capacity of 2,360 MW for the facility plant. PPL Corp.'s PPL Susquehanna unit is 90% owner of the nuclear plant. Allegheny Electric Coop. Inc. is a 10% owner. Unit 1 began commercial operation in 1983 and unit 2 in 1985. PPL Corp. will likely file for a 20-year operating license renewal for both units next year.

GE Energy, the plant's original equipment manufacturer, will work with PPL Corp. to prepare for the uprate, which will be implemented in phases during several refueling outages. (1)

PPL's amendment request was initially submitted to the Nuclear Regulatory Commission ("NRC" or "Commission") on October 11, 2006, and supplemented on October 25, November 21, and December 4, 2006.

A notice of opportunity for a hearing, as well as the NRC's staff's review and determination that "processes to determine that the amendment request involves no significant hazards consideration," was published in the Federal Register on March 13, 2007 (Vol. 72, No. 48), pp. 11392-11395.

III. Timeliness

(b) Timing. Unless otherwise provided by the Commission, the request and/or petition and the list of contentions must be filed as follows:

(3) In proceedings for which a Federal Register notice of agency action is published (other than a proceeding covered by paragraphs (b)(1) or (b)(2) of this section)...

Eric Joseph Epstein's Petition for Leave to Intervene, Request for Hearing and Presentation of Contentions and Supporting Factual Data was submitted to all identified entities in a timely manner as identified by Federal Register postings of March 13, 2007.

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1 "Generation Markets Week", *GE receives contract to increase output of PPL nuclear unit*, September 27, 2005.

IV. Standing

(3) The Commission, the presiding officer, or the Atomic Safety and Licensing Board designated to rule on requests for hearing and/or petitions for leave to intervene will determine whether the petitioner has an interest affected by the proceeding considering the factors enumerated in § 2.309(d)(1)-(2), among other things.

A. Eric Joseph Epstein Has Standing

Mr. Epstein meets the criteria of standing on his own behalf . The standing requirements for Nuclear Regulatory Commission (NRC) adjudicatory proceedings derive from the Atomic Energy Act (AEA), which requires the NRC to provide a hearing "upon the request of any person whose interest may be affected by the proceeding." (42 U.S.C. 2239(a)(1)(A). In addition, §2.309 establishes that requests for petitions to intervene must meet the basic standing *and* "one good contention" requirements of the old §2.714.

> This is a substantial departure from the old Subpart L, which required only the articulation of "areas of concern about the licensing activity that is the subject matter of the proceeding." The Commission believes that this modification better ensures that hearings will cover relevant concerns through the early framing of contested matters and the focusing of litigation on real, concrete issues. In addition, interested parties will now be required to file their contentions as part of the petition to intervene. Consequently, more "upfront" work will be required to prepare the petition to intervene, so the new rules provide additional time (60 days) to prepare the petition.

As the Commission has applied this standard, an individual demonstrates an interest in a reactor licensing proceeding sufficient to establish standing by showing that his or her residence is within the geographical area that might be affected by an accidental release of fission products. This "proximity approach" presumes that the elements of standing are satisfied if an individual lives within the zone of possible harm from the source of radioactivity. *See Virginia Elec. And Power Co.,* 9 NRC 54, 56 (1979) ("close proximity [to a facility] has always been deemed to be enough, standing alone, to establish the requisite interest" to confer standing).

The Commission's "rule of thumb" in reactor licensing proceedings is that "persons who reside or frequent the area within a 50-mile radius of the facility" are presumed to have standing. *Sequoyah Fuels Corp.,* 40 NRC 64. 75 n.22 (1994); *See also, Duke Energy Corp.,* 48 NRC 381, 385 n.1 (1998).

Mr. Epstein lives 56 miles from the nuclear power plant, but regularly pierces the 50 mile veil established by NRC case law due to work and familial obligations.

In Georgia *Power Co.* (Vogtle Electric Generating Plant, Units 1 and 2), LBP-93-5, 37 NRC 96 (1993), *aff'd*, CLI-93-16, 38 NRC 25 (1993), the Nuclear Regulatory Commission (NRC) approved standing for a petitioner living 35 miles from the plant one week per month.

In the CFC Logistics proceeding, the Atomic Safety and Licensing Board (ASL&B) "hasten[ed] to add ... that the 'obvious potential' aspect of 'proximity-plus' standing is not a concept that can be applied with engineering or scientific precision..." 60 NRC 475, 485 (2004), p. 487.

"[A] minor exposure to radiation, even one within regulatory limits, is sufficient to state an injury in fact" for standing purposes. Duke Cogema Stone & Webster (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 417 (2001), rev'd on other grounds, CLI-02-24, 56 N.R.C. 335 (2002) (citing Yankee Atomic Electric Co. (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 247-48 (1996)); see also id. at 420 (standing inquiry does not require precision regarding probability of petitioner receiving unwanted dose of radiation). The asserted harm – injury to the health and safety – is clearly encompassed by the health and safety interests protected by the Atomic Energy Act. Id. at 417; see also 42 U.S.C. § 2013.

In Pebble Springs, (4 NRC at 614-617. See Infra, § II. A.5.) the Commission also held that even if a Petitioner for intervention could not satisfy the strict judicial standing test, intervention could still be allowed as a mater of discretion.

Mr. Epstein routinely pierces the 50 mile proximate rule during his day-to day-actives simply by traveling to Lebanon, Schuylkill and upper Dauphin Counties. As noted during the teleconference, Mr. Epstein is a member of the Board of Directors of the Sustainable Energy Fund of Central Eastern Pennsylvania since its inception in 1999. He is also a director of GreenConnexions, Inc. since 2006 which is based in the same office. Both entities have a 29 county constituency that mimics PPL's residential customer base.

His commute to the office in Allentown, and meetings at off site locations, pierces the fifty mile proximity zone for substantial periods of time on a regular basis. Mr. Epstein's meeting schedule through the Fund's fiscal year (June 30, 2007), includes business meetings in Allentown, Conygnham, Fogelsville, Hazleton and Scranton on the following days and evenings:

- May 15, 16, 17 and 30. (2)
- June 5, 6, 12, 19, 21, 26 and 28.

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2 On May 15, 2007 Mr. Epstein will appear with Conocno-Philips in Scranton along with the Pennsylvania Chamber of Business and Industry and the Pennsylvania Environmental Coalition as part of a national dialogue - "A Conversation on Energy." The following day he will travel to Allentown for a SEF meeting.

Please note additional meetings may be scheduled as necessary in Kingston (28 miles from Berwick) SEF's counsel, Hourigan, Kluger & Quinn, PC is located in Kingston, and as Chair of the Human Relations Committee, Mr. Epstein must spend time in close proximity to Berwick for legal related matters.

In the Matter of PPL Susquehanna, LLC , Relicensing Application for the Susquehanna Steam Electric Station, Units 1 and 2, Docket Nos. 50-387-LR & 50-388-LR, ASLBP No. 07-851-01-LR, the Atomic Safety & Licensing Board panel held:

"We do, however find that the petitioner Epstein has made a sufficient showing to establish standing for himself under the "proximity presumption." Mr. Epstein admits that he resides more than fifty miles from the plant. However, significant contacts with an affected area can be sufficient to establish standing, the regularity of Mr. Epstein's trips to the area around the plant, for a number of years, weighs in his favor. In addition, he resides six miles outside the area in question and can therefore be expected to continue to conduct business there in the future. Because of this pattern of regular contacts within the 50-mile radius around the plant, we find that Mr. Epstein has standing on his own behalf." (3)

Based on case law, precedent and recent ruling relevant to Mr. Epstein and the Susquehanna Steam Electric Station, Mr. Epstein has established standing, and will be potentially adversely affected if the proposed amendment causes the release of radiological emissions or atmospheric releases into the environment, or the proposed uprate increases the likelihood of toxic, caustic or carcinogenic discharges into the environment. (4)

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3 Memorandum and Order, (Ruling on Standing and Contentions of Eric Joseph Epstein, USNRC, Docket No's. 50-387-LR, 50-388-LR, ASLBP No. 07-851--01-LR, BD01, pp. 9-10, March 22, 2007.

4 Amendment to Pennsylvania Constitution, Section 27, Article 1, 1969: "The people have the right to clean air, pure water, and to the preservation of natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all people, including generations yet to come. As a trustee of the resources the Commonwealth shall maintain and conserve them for the benefits of all people."

V. Eric Joseph Epstein Submits Three Admissible Contentions

A. Legal Standards

Proposed contentions must satisfy six requirements of 10 C.F.R. § 2.309(f)(1). This rule is intended to ensure that "full adjudicatory hearings are triggered only by those able to proffer at least some *minimal factual and legal foundation* in support of their contentions." *Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3),* 49 N.R.C. 328, 334 (1999)(emphasis added). Sections (1) through (6) below summarize the requirements of Section 2.306(f)(1).

> Contentions. (1) A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised...
>
> (2) Contentions must be based on documents or other information available at the time the petition is to be filed, such as the application, supporting safety analysis report, environmental report or other supporting document filed by an applicant or licensee, or otherwise available to a petitioner. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report...

(i) Provide a specific statement of the issue of law or fact to be raised or controverted;

(ii) Provide a brief explanation of the basis for the contention;

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

B. Contentions

Contention 1:

(i) Provide a specific statement of the issue of law or fact to be raised or controverted.

PPL failed to consider the impact of the proposed uprate on certain state and federal water use issues, and the potential impact these regulations will have on water flow, water volume and surface water withdrawal for the SSES's cooling systems. The traditional implications of the Pennsylvania Public Utility Commission ("Pa PUC") policy and regulations relating to "withdraw and treatment" of water, i.e., referred to as "cost of water" under the Public Utility Code, Title 66, have to be factored in this application absent a PUC proceeding as well as Act 220 water usage guidelines. PPL has not established (nor has the NRC reviewed) compliance milestones for EPA's Act 316 (a) or 316 (b) and their impact on power uprates at the Susquehanna Electric Steam Station. (5)

(ii) Provide a brief explanation of the basis for the contention.

State and federal regulations which many impact, constrict or restrict water flow that would adversely impact cooling systems at the plant, and lead to health and safety challenges for local communities.

A basis for a contention can be a reference to a source and an assertion; there is no need to detail evidence in support of it. (6)

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5 "NRC boards may without further inquiry accept and utilize in their cost-benefit analysis EPA's determinations under Sections 316 or 402 of FWPCA of the impacts on the aquatic ecosystem of the condenser cooling discharge of a nuclear plant whether or not all parties to NRC proceedings were before the EPA." (Public Service Company of New Hampshire , Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 23-29 (1978), and later affirmed in New England Coalition on Nuclear Pollution v. NRC, 582 F. 2d 87 (1st Cir. 1978).

6 Houston Lighting & Power Company (Allens Creek Nuclear Generating Station Unit 1) ALAB-590, 11 NRC 542, 547-548 (1980); Mississippi Power & Light Company (Grand Gulf Nuclear Station Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973).

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding.

Acts of omission by the licensee in the filing of the uprate amendment have produced a fatal flaw that can only be cured through a reevaluation of portions of the proposal. The Company applied a generic scoping brush to water use and aquatic challenges at the SSES that failed to include site specific, regional and indigenous health and safety challenges. Mr. Epstein has requested the submission and evaluation of absent information and data in order to remedy this grave oversight.

PPL also failed to consider several state and federal water use issues, and the potential impact these regulations will have on water flow, water volume and surface water withdrawal for the SSES's cooling systems.

An NRC license must meet Commission regulations, technical specifications, and various requirements in a regulatory scheme where "public safety is the first, last and permanent consideration." Where a contention alleges a deficiency or error in the application, the deficiency or error must have some independent health and safety significance." (7)

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7 *In the Matter of Dominion Nuclear Connecticut, Inc.(*Millstone Nuclear Power Station, Units 2 and 3) Docket Nos. 50-336-LR, 50-423-LR ASLBP No. 04-824-01-LR July 28, 2004, p. 7. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP- 98-7, 47 NRC 142, 179-80 (1998), aff'd in part, CLI-98-13, 48 NRC 26 (1998).

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

Had PPL Susquehanna scratched the regulatory surface in their license application, they would have disclosed the need to coordinate, and perhaps submit an "alternative plan" as a result of Act 220. (8) It is not logical, reasonable or plausible to believe PPL Susquehanna was unaware of water use regulations. (9) The Company simply failed to include this data in their application. (10)

In **March 2008** areas will be identified where water use **exceeds** (or is projected to exceed) available supplies. If the **SSES is designated as an endangered or sensitive area, PPL will have to comply with a "water budget"** established by the Regional Water Resource Committee and the Critical Advisory Committee.

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8 Act 220 of **2002** mandates that the Department of Environmental Protection update the state water plan by **2008**. "The Environmental Quality board will adopt regulations addressing water use registration, period reporting and record keeping (Section 3118), and the DEP is authorized "to enforce the Act. It also "establishes the duty of any person to proceed diligently in compiling with orders of the DEP." (Section 3133)

9 **Susquehanna River Basin Commission:**
§801.6 Water supply
(b) The Commission may regulate the withdrawal of waters of the basin not regulated by the signatory parties for domestic, municipal, industrial, and agricultural uses if regulation is considered essential to further the aims set forth in the comprehensive plan.
(c) The Commission shall study the basin's water supply needs, the potential surface and ground water resources, and the interrelationships to meet these needs through existing and new facilities and projects. Efficient use and management of existing facilities with emphasis on the full utilization of known technology will be explored in meeting water supply needs for domestic, municipal, agricultural, and industrial water supply before new programs or projects are approved.

10 As a point of reference, please note that he SSES is located in the "West Branch, Upper, Middle Susquehanna and Chemung River Basins" Region.

PPL's Susquehanna Electric Steam Station plans to increase the volume of surface water it removes from the Susquehanna River regardless of seasonal fluctuations, impending water restrictions and during periods of drought. People and animals who depend on these aquatic resources will also be affected, and it is likely more fish and aquatic life will be harmed as a result of the uprate's impact on the River environment. PPL's planned uprate and application for relicensing will further place pressure on limited water resources.

Surface water consumption (11), fish kills, thermal inversion and effluent discharges, are not adequately covered or evaluated in the proposed amendment for an uprate at the SSES. During the 2002 drought, water shortages on the Susquehanna reached critical levels, yet these power plants were exempted from water conservation efforts **prior to the implementation of Act 220**.

A sample of the magnitude of the amount of water used at nuclear power plants is readily evidenced at PPL's Susquehanna Steam Electric Station (SSES) located on the Susquehanna River in Luzerne County. The plant draws 40.86 million gallons per day from the Susquehanna River. For each unit, 14.93 million gallons per day are lost as vapor out of the cooling tower stack while 11 million gallons per day are returned to the River as cooling tower basin blow down. On average, 29.86 million gallons per day are taken from the Susquehanna River and not returned. This data is public information, and can be easily referenced by reviewing PPL's Pennsylvania Environmental Permit Report.

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11 Freshwater water withdrawals by Americans increased by 8% from 1995-2000, and Americans per capita water withdrawal is three times above the international average, "U.S. National Report on Population and the Environment" (2006) published by the Center for Environment and Population, a nonprofit corporation based in Connecticut.

Compliance milestones for the Environmental Protection Agency (EPA) Act 316 (a) or 316 (b) have been in play since July 9, 2004 when the Agency issued the Final Phase II rule implementing Section 316(b) of the Clean Water Act. The was first national standards for reducing fish kills at existing plants. which **predated** PPL's current water use permit at the SSES. Now large water consumers, including PPL, are compelled to invetorize mortality rates and identify species of aquatic life affected by water intakes. The regulations were due to take effect on September 7, 2005.

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

PPL failed to factor, consider and address numerous water use and indigenous aquatic challenges present and anticipated for the Susquehanna River environs in the Berwick-area. The sufficiency of the uprate evaluation for considering water use is grossly inadequate and fails to anticipate or plan for emerging health and safety challenges as a result of water use regulations and aquatic challenges. The uprate expansion proposed in the Susquehanna Electric Steam Station amendment is inadequate because:

(1) It does not include proactive action plans for water challenges resulting from natural and mechanical adversaries.

(2) It does not recognize that it is initial manifest with the Susquehanna River Basin Commission application has been "grandfathered" and must be resubmitted.

(3) It does not factor Act 220 into water use considerations , although the rule had been **vetted and reviewed prior to the submittal** of the uprate amendment.

During the SSES relicensing proceedings, the staff complained that "PPL is under no obligation to anticipate a future law" and further presumes that the grandfathered SRBC Commission is current, assumed that PPL is in compliance, dismissed Asiatic clam and Zebra mussel "concerns", and essentially ignores historic implications of PUC's policy and regulations relating to "withdraw and treatment" of water, i.e., referred to as "cost of water" under the Public Utility Code, Title 66 as well as DEP's Act 220. (NRC Reply, pp. 18-20)

(4) PPL has not established, nor has the NRC reviewed compliance milestones for EPA's Act 316 (a) or 316 (b). For example, PPL Susquehanna failed to investigate or report on the impact of the uprate fragile series of shad ladders.

(5) Nuclear plants occasionally discharge chlorinated water (necessary to minimize bacterial contamination of turbines) or Clamtrol (chemical agent used to defeat Asiatic clam infestation) directly into the River. Asiatic calm infestation has challenged Peach Bottom and Three Mile Island's cooling systems, and it is logical for PPL Susquehanna to submit an action plan to defat both environmental challenges should they **migrate upstream**. For example, in February 1986, one celled organisms believed to be fungus, bacteria and algae like creatures were discovered at Three Mile Island. These creatures obscured the view of the reactor core, and impeded the cleanup.

DEP recently confirmed that zebra mussel adults and juveniles have been found in Goodyear Lake, the first major impoundment on the Susquehanna River's main stem below Canadarago Lake in New York. Zebra mussels are an invasive species posing a serious ecological and economic threat to the water resources and water users downstream in the river and Chesapeake Bay.

> "In 2002, the first report of zebra mussel populations in the Chesapeake Bay Watershed were reported from Eaton Reservoir in the headwaters of the Chenango River, a major tributary to the Susquehanna River in New York. A short time later, zebra mussels also were found in Canadarago Lake, a lake further east in the Susquehanna main stem headwaters. Now, through DEP's Zebra Mussel Monitoring Network, reports were received that both zebra mussel adults and juveniles, called veligers, have made their way down to the Susquehanna main stem,
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> (Pa DEP, *Update*, July 16, 2004.)

(5) Water shortages on the Lower Susquehanna reached critical levels in the summer of 2002. During the 2002 drought, the SSES was exempted from water conservation efforts. For the month of August 2002, 66 of 67 Pennsylvania counties had below normal precipitation levels. The SSES did not take any measures or precautions to "conserve" water. Moreover, recent and consistent droughts in Pennsylvania (2002) as well as flooding (2006) have forced state and regulatory bodies to reexamine water as a commodity in the Commonwealth of Pennsylvania.

(6) Last year, despite the fact Columbia County was **-3.6** inches below normal precipitation levels and Luzerne County was **-3.2** inches under (a 51-75% decrease below the norm), the SSES continued to gobble up water as their neighbors conserved. (*DEP Drought Watch*, April 11, 2006) This behavior will change after 2008 and potentially impact the plant's water use and cooling plans.

Water use must be factored into the application for renewal. This is not an academic issue as evidenced by a recent Pennsylvania court decision guaranteeing the rights of citizens to have access to the Little Juniata River in Huntingdon County for fishing, boating, and other recreation. Furthermore, the Pennsy Supply suit v. the SRBC (December 22, 2006), will have long term implications on the SSES ability to mine water from the Susquehanna River. Those regulations increased the Commission power to regulate water usage by business and public facilities.

PPL Susquehanna's corporate family has a recent history of fouling water resources. On January 12, 2007 PPL Holtwood was ordered to stop the discharge of coal bottom ash into the the Susquehanna River and was assessed a n $85,000 civil Penalty by the Department of Environmental Protection (DEP). Four days later, PPL announced it has reached a $1.5 million preliminary settlement to end a lawsuit over the 2005 fly ash spill at the Martins Creek power plant into the Delaware River.

In December, 2005 the the DEP issued a notice of violation to PPL for a fish kill that occurred due to a sharp increase in the temperature of the water discharged into the Susquehanna River from Brunner Island. Hundreds of fish from minnows to bass to shad were killed. According to DEP South central Regional Director Rachel Diamond,

> PPL took a circulation pump off line and that resulted in a rapid and dramatic rise of about 20 degrees in the temperature of the water flowing to the river from the company's discharge channel, PPL exceeded the thermal limits in their discharge permit and violated sections of Pennsylvania's Clean Streams Law.

(vii) Remedies

1) The Company must resubmit and revise its amendment application to analyze the impact of state and federal regulations on the proposed uprate and potential for a "new or different kind of accident from any accident previously evaluated, and the "unanticipated adverse health and steady consequences" this accident may cause on the local environs.

2) PPL must resubmit the amended requests after the SRBC has evaluated PPL's pending water use application to ensure new and unanticipated adverse health and steady consequences have been evaluated.

3) None of these requests present a hardship to PPL Susquehanna. The SRBC is just beginning its due diligence on PPL's combined uprate and relicensing application.

(viii) Conclusion

PPL failed to consider the coordination of water use issues with state and federal agencies, and the potential impact these regulations will have on water flow, water volume and surface water withdrawal for the SSES's cooling systems.

PPL's inability, unwillingness and resolute refusal to coordinate with new and emerging regulations from the EPA and the SRBC and Act 220 are **self-inflicted hardships**. The NRC can not excuse PPL's omissions and failure to submit an action plan on these state regulations. These regulations have been enacted, and were in the implementation stages for several years **prior** to PPL's filing. PPL, through its own haste to uprate the Susquehanna Electric Steam Station, left these obligations off of their amendment matrix.

Contention 2:

(i) Provide a specific statement of the issue of law or fact to be raised or controverted.

PPL failed to disclose damaging information included in a hastily filed Application for Surface Water Withdrawal (11)."[W]hen a party has relevant evidence within his control which he fails to produce, that failure gives rise to an inference that the evidence is unfavorable to him." (12)

(ii) Provide a brief explanation of the basis for the contention.

PPL Susquehanna actually references the NRC filings in the Susquehanna River Basin Commission ("SRBC") application, yet their amendments (and the NRC's subsequent review) fails to include action plans to repair faulty and corroded piping identified by the applicant in another venue. (13)

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11 Request to Modify Application 19950301 EPUL-0578 PPL's Letter to the Susquehanna River Basin Commission was filed on December 20, 2006, p. 2)

Please refer to Exhibit 1.

12 Public Service Company of New Hampshire, Seabrook Station Units 1 and 2), ALAB-471, 7 NRC 477, reviewed as to other matters, CLI -78-14, 7 NRC 952 (1978)

13 "In order to fulfill its regulatory obligation, the NRC is dependent on all of its licensees for accurate and timely information...[L]licensees are the first line to ensure the safety of the public." (Petition for Emergency and Remedial ACtion, CLI-78-6, 7 NRC 400, 418 (1978). See also Consumer Power Co. (Midland Plant, Units 1 and 2), CLI-74-3, 7 NRC 7, 11 (1974)

iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding.

PPL failed to address, correct and analyze the problems associated with a faulty river intake valve "significantly reduces the margin of safety" at the SSES, and undermines the Company's generic evaluation of water related components and systems and the potential impact an uprate would have on those systems.

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

The most disturbing admission contained in PPL's report to the Susquehanna River Basin Commission relates to corroding and poorly performing piping which PPL did not "discover" until **after the submission of the uprates amendment** on October 11, October 25, November 21, and December 4, 2006. PPL has known about this problem, yet failed to share the data with the NRC or disclose the damaging information during the uprate amendment process.

> The River Intake Structure flow meters to measure withdrawal. However, metering of the withdrawal has been inaccurate due mainly to corrosion and fouling of the intake pipes. The intake pipes are made of carbon steel, and PPL is evaluating replacement of sections of this pipe with stainless steel pipe to minimize flow measurement meter error... If the pipe replacement project proceeds and withdrawal quantities determined by the two methods are comparable, then PPL will use the metered withdrawal to periodically verify the calculated withdrawal based on the sum of cooling tower water loss, cooling tower blow down, and emergency spray makeup. If the metered withdrawal is significantly different from the calculated withdrawal, PPL will discuss with the Commission the appropriate next steps for measuring withdrawal. PPL will keep the Commission apprised of these activities. (14)

PPL failed to address, correct and analyze the problems associated with a faulty river intake valve "significantly reduces the margin of safety" at the SSES, and undermines the Company's generic evaluation of water related components and systems and the potential impact an uprate would have those systems.

The NRC should not excuse PPL's omissions or failure to submit an action plan to address these health and safety challenges.

(vii) Remedies

PPL has publicly announced a significant technical problem with health and safety implications that needs to be investigated prior to issuing an uprate amendment. A power uprate submittal need not cover inspections of components or systems containing radioactively contaminated water, ***unless*** the power uprate changes the volume, pressure, or temperature of said water. (15) This amendment, at a minimum, will affect both water volume and temperature.

Since the River Intake Structure flow monitors the volume of water, the Company's current application is deficient and does not provide for adequate inspection of systems and components that may contain radioactively contaminated water, and there is not adequate monitoring in place to determine if and when leakage from these areas occurs. Some of these systems include underground pipes and tanks which the current aging management and inspection programs do not effectively inspect and monitor.

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14 By October 11, October 25, November 21, and December 4, 2006, PPL recognized that Act 220 could not be ignored during a uprate amendment, yet this data was not filed with the SRBC **until December 20, 2006.**

15 PPL acknowledged during their **2001 uprate application** the water temperatures would be increased:

The licensee indicated that an increase in the cooling tower air flow rate will compensate for the slight increase in condenser outlet circulating water temperature, such that no perceptible change in the temperature of the cooling tower basin blowdown to the Susquehanna River is expected. Therefore, the temperature effects on the river will be insignificant. Existing administrative controls ensure the conduct of adequate monitoring such that appropriate actions can be taken to preclude exceeding the limits imposed by the National Pollution Discharge Elimination System permit. No additional requirements or other changes are required as a result of the power uprate. No other non-radiological impacts are associated with the proposed action. [Federal Register: June 25, 2001 (Volume 66, Number 122)] [Page 33716-33717]

PPL **can no longer assure the NRC** that reliable administrative controls are in place to "ensure the conduct of adequate monitoring."

PPL has admitted that the River Intake Structure flow meters to measure withdrawal are "inaccurate due mainly to corrosion and fouling of the intake pipes." Therefore there is no procedure, mechanism or equipment currently in place that can accurately determine water use. If the quantity of water is an **unknown variable, then the amount of water passing through the plant's cooling system can not be accurately gauged for consumptive and cooling and discharge purposes.**

The power uprate will significantly increase the amount of waste heat discharged from the main condenser and dissipated to the environment via the SSES cooling towers. Consequently, more water will be evaporated through the towers by the higher heat rejection amount and more makeup water will be needed from the river to maintain the desired water levels in the cooling tower basins. Therefore, the power uprate will exacerbate SSES's current intake structure flow meter inaccuracy problems.

The water variable undermines the ability of PPL to affix the appropriate chemical dosage needed to defeat unanticipated thermal aquatic invasions that were not planned for or anticipated in the original license or the Present amendment. Additionally, the variable presents increased safety challenges by undermining and disrupting the SSES's borated water formula. The NRC has asked PPL to revise their assumptions during the 2001 request in part due similar concerns raised by Mr. Epstein in the Present application:

> 50.62. PPL performed a safety assessment of the SLC systems ability to inject the borated solution consistent with the assumptions of the ATWS analyses. In response to the inspection findings, PPL modified the design of the SLC system for Unit 2 by replacing the flanges of the two SLC pumps with higher rated flanges and by increasing the SLC pump discharge relief valve setpoints to 1500 psig. In addition, the licensee committed to perform similar SLC system design changes for Unit 1 during the spring 2002 refueling outage. (16)

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16 Correspondence to Mr. Robert G. Byram , Senior Vice President and Chief Nuclear Officer, PPL Susquehanna, LLC from Robert G. Schaaf, Project Manager, Section 1, Project Directorate I, Division of Licensing Project Management Office of Nuclear Reactor Regulation (July 6, 2001).

Power uprate also entails additional steam flow dumped into high pressure environments, e.g., turbine, has caused turbine stress cracks at Dresden. Turbine blade cracking led to serious and costly events at Fermi Unit 2 and Salem.] (Please refer to Exhibits 2, 3 and 4). These precursor events need to be applied as a "steam flow" yardstick during the present amendment proposal.

The Company's current application is deficient and does not provide for adequate inspection of all systems and components that may contain radioactively contaminated water, and there is not adequate monitoring in place to determine if and when leakage from these areas occurs. Some of these systems include underground pipes and tanks which the current aging management and inspection programs do not effectively inspect and monitor.

The power uprate evaluation failed to adequately screen structures and components that may be affected by the uprate, and assumes existing programs are appropriate and calibrated. The Company has undermined its credibility and veracity to make assumptions based on their admission of a chronically ailing River Intake Structure.

PPL did not take a proactive "hand's-on" approach to evaluating subsets and subset samples; and, therefore, reduced the actual amount of aging equipment that was physically tested. PPL has undermined their ability to accurately predict the impact an uprate will have on aging equipment operating in harsh and corrosive environments.

The impact of aging equipment is fluid, and should require in-depth pre- and post-examination of equipment, e.g., safety systems not used day-to-day and on stand-by, e.g., coolers and emergency diesel generators, to avoid encountering a safety grade challenge like the Quad Cities stream dryer issue (17).

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17 Quad Cites, like the Susquehanna Electric Steam Station, a General electric boiling water reactor. During an extended power uprate test at Quad Cities Nuclear Generating Station in March 2005, the plant began to "vibrate." On March 29 the plant was manually shut down due to high vibrations causing leaks in the main turbine control system, and it was subsequently discovered the vibrations broke a main steam pipe drain line.

1) The Company must resubmit and revise its application to address issues related to corroding and poorly performing piping. PPL must analyze potential for a "new or different kind of accident from any accident previously evaluated, "and the unanticipated adverse health and safety consequences this accident may cause on the local environs.

2) PPL must resubmit the amended requests after the SRBC has evaluated PPL's pending water use application to ensure new and unanticipated adverse health and safety consequences have been evaluated.

3) None of these requests present a hardship to PPL Susquehanna. The SRBC is just beginning its due diligence on PPL's combined uprate and relicensing application.

(viii) Conclusion

The Company's current amendment application is deficient and does not provide for adequate inspection of all systems and components that may contain radioactively contaminated water, and there is not adequate monitoring in place to determine if and when leakage from these areas occurs. Some of these systems include underground pipes and tanks which the current aging management and inspection programs do not effectively inspect and monitor.

Contention 3:

(i) Provide a specific statement of the issue of law or fact to be raised or controverted.

The proposed change involves a significant increase in the "consequences" of an accident than previously evaluated, and the amount of radioactivity in the reactor core (and thus available for release in event of an accident) is significantly more at 120% power than at 100% power.

(ii) Provide a brief explanation of the basis for the contention.

PPL and the NRC are overly reliant on compliance with NRC's regulations, without examining the "consequences" of an accident caused by the proposed uprate. The amount of radioactivity in the reactor core (and thus available for release in event of an accident) is significantly more at 120% power than at 100% power.

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding.

The proposed change involves a significant increase in "consequences" of an accident than previously evaluated, and the amount of radioactivity in the reactor core (and thus available for release in event of an accident) is significantly more at 120% power than at 100% power.

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding.

The proposed change involves a significant increase in the "consequences" of an accident than previously evaluated, and the amount of radioactivity in the reactor core (and thus available for release in event of an accident) is significantly more at 120% power than at 100% power.

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

PPL and the NRC pursue a "consequences argument" when evaluating the amount of radioactivity in the core present after the uprate. PPL neglected to evaluate the amount of radioactivity in the core, and thus available for release in event of an accident is significantly more at 120% power than at 100% power.

By way of analogy, consider a commercially-licensed bus that is licensed for a maximum capacity of 20 persons, including the driver. If its owner modifies the bus (perhaps taking out an onboard rest room facility and replacing it with seating) to re-license the bus for a maximum capacity of 24 persons, it is a 120% update. The probability of that bus having an accident may be insignificantly affected by the additional passengers (despite any higher weight) if the dominate accident causal factors are driver performance, road conditions, and external factors like other vehicles. But the consequences of an accident are significantly higher if the accident occurs with 24 souls on-board vs. only 20 souls.

In the bus case, one might justify the additional consequences with the argument that the alternative to the bigger bus, is running two trips with the smaller bus. More trips with the same accident rate per trip equates to more accidents. Overall, the risk might be the same, e.g., more accidents with smaller buses equals fewer accidents than with larger buses in terms of fatalities.

But PPL made no such case, nor did the Company conduct new analyses to anticipate changing core conditions. PPL's review was limited to static compliance with existing conditions without identifying or accounting for increased accident "consequences."

(vii) Remedy

1) PPL must resubmit portions of its amendment and evaluate the amount of radioactivity in the reactor core, and thus available for release in the event of an accident is significantly more at 120% power than at 100% power, and the consequences posed by the increase.

2) PPL must evaluate the impact and "consequences" of Highly Enriched Uranium fuel and High Thermal Performance Fuel on the proposed uprate on Reactor Coolant System Pressure and Temperature Safety Limits.

2) PPL must evaluate the impact and "consequences" of Highly Enriched Uranium fuel and High Thermal Performance Fuel on water flow, water volume and ultimate heat sink temperatures.

(viii) Conclusion

The proposed change involves a significant increase in the probability or consequences of an accident previously evaluated, and the amount of radioactivity in the reactor core (and thus available for release in event of an accident) is significantly more at 120% power than at 100% power.

VI. Conclusion

§ 2.309 Hearing requests, petitions to intervene, requirements for standing, and contentions.

(a) General requirements. Any person whose interest may be affected by a proceeding and who desires to participate as a party must file a written request for hearing or petition for leave to intervene and a specification of the contentions which the person seeks to have litigated in the hearing. Except as provided in paragraph (e) of this section, the Commission, presiding officer or the Atomic Safety and Licensing Board designated to rule on the request for hearing and/or petition for leave to intervene will grant the request/petition if it determines that the requestor/petitioner has standing under the provisions of paragraph (d) of this section and has proposed at least one admissible contention that meets the requirements of paragraph (f) of this section...

(1) Factors weighing in favor of allowing intervention--

(i) The extent to which the requestor's/petitioner's participation may reasonably be expected to assist in developing a sound record;

(ii) The nature and extent of the requestor's/petitioner's property, financial or other interests in the proceeding; and

(iii) The possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest.

Eric Joseph Epstein has met all for the requirements stated in "2.309 Hearing requests, petitions to intervene, requirements for standing, and contentions," and his Petition to Intervene should be granted and all three contentions accepted.

Respectfully submitted,

Eric Joseph Epstein
4100 Hillsdale Road
Harrisburg, PA 17112
(717)-541-1101 Phone

Dated: May 11, 2007

EXHIBIT 1

SRBC #72
06/12/02

Susquehanna River Basin Commission

a water management agency serving the Susquehanna River Watershed

PROJECT INFORMATION

1. Applicant Information:

Applicant Name or Registered Fictitious Name PPL Susquehanna, LLC

Parent Corporation Name, if different PPL Corporation

Mailing Address Two North Ninth Street

GENPL5

City Allentown State PA Zip 18101-1179

Contact Person Jerome S. Fields, REM Title Sr. Environmental Scientist - Nuclear

Telephone (610) 774-7889 Fax (610)774-7782 E-Mail jsfields@pplweb.com

2. Preparer (Hydrogeologist/Engineer):

Name Jan C. Phillips, P.E.

Title

Company Jan C. Phillips, P.E.

Address 2611 Walnut Street

Allentown, PA 18104-0160

Phone (610) 821-0160 Fax (610) 821-0160

Signature Jan C. Phillips

Date 12-19-06 E-Mail Address jcphllps@enter.net

3. Project Engineer:

Name N/A

Title

Company

Address

Phone ( ) Fax ( )

Signature

Date E-Mail Address

4. Location of proposed source(s), if applicable:

State Pennsylvania County Luzerne

Municipality Salem Township

Latitude N 41° 05' 12.4" Longitude W 76° 07' 53.2"

5. State, county, or other regulatory/permitting contacts:

Agency N/A Department

Name Position

Permit/Area of Concern:

Address

Phone E-Mail

Agency Department

Name Position

Permit/Area of Concern:

Address

Phone E-Mail

Agency Department

Name Position

Permit/Area of Concern:

Address

Phone E-Mail

PPL Susquehanna, LLC
Two North Ninth Street
Allentown, PA 18101-1179
Tel. 610.774.7889
jsfields@pplweb.com

December 20, 2006

Mr. Paul O. Swartz, Executive Director
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-2391

Attn: Project Review Coordinator

PPL SUSQUEHANNA, LLC
APPLICATION FOR SURFACE WATER WITHDRAWAL
REQUEST TO MODIFY APPLICATION 19950301
EPUL- 0578

Dear Mr. Swartz:

Enclosed for the Susquehanna River Basin Commission's (Commission's) approval please find an application to increase the existing maximum daily surface water withdrawal at the Susquehanna Steam Electric Station (SES) from approximately 58 million gallons per day (MGD) to 66 MGD. This application includes a proposed water use monitoring plan. In addition, PPL Susquehanna, LLC hereby requests modification of Application 19950301 dated March 9, 1995 to eliminate the 30-day average consumptive water use limit of 40 MGD at the Susquehanna SES.

Background

The Susquehanna SES is a two-unit, baseload, boiling-water-reactor electric generating station. Unit 1 and Unit 2 each have a present electrical capacity of 1,190 MWe. Ownership of the Susquehanna SES is shared by PPL Susquehanna, LLC, Berwick, PA (90 percent) and Allegheny Electric Cooperative Inc., Harrisburg, PA (10 percent). PPL Susquehanna is a subsidiary of PPL Generation, LLC, which in turn is an indirect subsidiary of PPL Corporation. PPL Susquehanna (hereinafter "PPL") is the licensed operator of the Susquehanna SES.

The Susquehanna SES is located on the west bank of the Susquehanna River, in Salem Township, Luzerne County, PA. The largest community within 10 miles is the Borough of Berwick, PA located approximately five miles southwest of the station. Susquehanna SES property (owned by PPL and Allegheny Electric) is 1,574 acres in area; 1,173 acres lie to the west of U.S. Route 11 and contain most of the station facilities, and 401 acres lie between U.S. Route 11 and the river and comprise the Susquehanna Riverlands Recreation Area. The Susquehanna Riverlands Recreation Area includes

natural and recreational areas. Also, PPL owns an additional 717 acres of mostly undeveloped property on the east side of the river.

In September 2006, PPL submitted an application to the U.S. Nuclear Regulatory Commission (USNRC) to renew the Susquehanna SES operating licenses for an additional 20 years (Unit 1 to 2042 and Unit 2 to 2044). In October 2006, PPL submitted to the USNRC an application for an Extended Power Uprate (EPU) for both units. The EPU will occur between the second quarter 2008 and the second quarter 2010 and will increase electrical generation up to approximately 1,300 MWe for each unit. Major EPU modifications associated with the station systems will be initiated during the March 2008 or subsequent refueling outages; the river water make-up, circulating water, and blowdown systems will not be modified for the EPU.

The Susquehanna SES withdraws water from the Susquehanna River through a river intake (River Intake Structure) along the west bank of the river adjacent to the station. The River Intake Structure includes four operating pumps, each with an individual design capacity of 13,500 gallons per minute (gpm). The operational combined capacity of the four pumps is approximately 45,000 gpm but can vary depending on river conditions and the conditions of the pumps. Blowdown from the station's cooling water system is discharged back to the river through a diffuser pipe located on the river bottom downstream of the river intake.

Application to Increase Surface Water Withdrawal from the Susquehanna River

The estimated maximum daily rate of river water withdrawal for the existing station is approximately 58 MGD. This withdrawal preceded the effective date (November 1995) of the Commission's surface water withdrawal regulations and, therefore, did not require the approval of the Commission. PPL estimates that the maximum daily post-EPU withdrawal will be no greater than 65.35 MGD. Accordingly, PPL submits the enclosed application for a surface water withdrawal of 66 MGD.

Information on the environmental impact of the EPU may be found in two reports prepared by PPL and submitted to the USNRC, copies of which were given to Commission staff at a meeting on November 13, 2006:

- "Supplemental Environmental Report – Extended Power Uprate" dated March 2006; and
- "Environmental Report – Operating License Renewal Stage – Appendix E" (Section 3.1.2 – Cooling and Auxiliary Water Systems) dated September 2006; see the following website for the entire report:

http://www.nrc.gov/reactors/operating/licensing/renewal/applications/susquehanna.html.

Water Use Monitoring Plan

ATTACHMENT C to the enclosed application is a proposed Water Use Monitoring Plan. PPL will continue using the cooling tower performance diagram to estimate cooling tower evaporation. Total cooling tower water loss will be estimated by adding an allowance for cooling tower drift loss to the cooling tower evaporation. Total surface water withdrawal will be determined as the sum of (a) the total cooling tower water loss, (b) the cooling tower blowdown, and (c) the makeup flow to the emergency spray pond. Daily volumes of cooling tower water loss and total surface water withdrawal will be reported to the Commission quarterly.

The River Intake Structure includes flow meters to measure withdrawal. However, metering of the withdrawal has been inaccurate due mainly to corrosion and fouling of the intake pipes. The intake pipes are made of carbon steel, and PPL is evaluating replacement of sections of this pipe with stainless steel pipe to minimize flow meter measurement error. Following replacement of sections of pipe from two of the four make-up pumps, it may be possible during one-unit outages to operate the station with those two pumps and to compare the metered withdrawal flow to the calculated sum of cooling tower water loss, cooling tower blowdown, and emergency spray pond makeup. If the pipe replacement project proceeds and withdrawal quantities determined by the two methods are comparable, then PPL will use the metered withdrawal to periodically verify the calculated withdrawal based on the sum of cooling tower water loss, cooling tower blowdown, and emergency spray pond makeup. If the metered withdrawal is significantly different from the calculated withdrawal, PPL will discuss with the Commission the appropriate next steps for measuring withdrawal. PPL will keep the Commission apprised of these activities.

Modification of Consumptive Water Use Application 19950301

On March 9, 1995 (Application No. 19950301), the Commission approved the consumptive water use at the Susquehanna SES up to a 30-day average of 40 MGD, not to exceed a daily usage of 48 MGD. As discussed with Commission staff at the November 13, 2006 meeting, PPL requests a modification to this approval to eliminate the 40 MGD 30-day average limit. This is consistent with other recent consumptive water use application modifications.

Comments

PPL does not expect the maximum daily river water withdrawal to exceed 65.35 MGD. For purposes of this application, PPL is requesting approval of a maximum daily river water withdrawal of 66 MGD. Also, PPL does not expect the maximum daily consumptive water use to exceed the currently approved 48 MGD. In the event of an apparent exceedance, PPL requests an opportunity to evaluate the problem and to discuss it with the SRBC staff prior to the Commission issuing a notice of violation.

Fees

Based on the Commission's Project Fee Schedule effective through December 31, 2006, the fees for the Susquehanna SES permitting activities requested herein are as follows:

• Surface Water Withdrawal Application (66 MGD):	$186,000.00
• Project Modification (elimination of 30-day average consumptive water use limit of 40 MGD):	$2,500.00
Total	$188,500.00

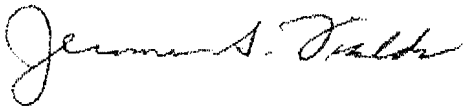
Payment of these fees is being sent to the Commission under separate correspondence.

Public Notice

PPL is proceeding to issue public notice of this application in accordance with the Commission's regulations. Notifications will be made to Luzerne County, Salem Township, a local newspaper, and property owners in Salem Township either contiguous to or nearby the Susquehanna SES.

PPL requests the Commission's prompt review and approval of the enclosed surface water withdrawal application and the request for modification of the approved consumptive water use. Should you or your staff have any questions, please contact me at (610) 774-7889 or by e-mail at jsfields@pplweb.com. Thank you for your consideration.

Sincerely,



Jerome S. Fields, REM
Senior Environmental Scientist – Nuclear

Enclosure: SRBC Surface Water Withdrawal Application

Cc Delivered via electronic mail to:

Ms. P. A. Ballaron	SRBC
Mr. T. W. Beauduy	SRBC
Mr. M. G. Brownell	SRBC
Mr. A. D. DeHoff	SRBC

X:\Special Projects\EPU Project\EPU\EPU1.s

Susquehanna River Basin Commission

a water management agency serving the Susquehanna River Watershed

Surface Water Withdrawal Application for up to 66 MGD at the existing Susquehanna Steam Electric Station (SES) on a maximum day, in conjunction with the Extended Power Uprate (EPU). ATTACHMENT C to this application is a proposed Water Use Monitoring Plan.

1. **Applicant Information:**

   Company Name: PPL Susquehanna, LLC (PPL)

   Mailing Address: Two North Ninth Street – GENPL5

   Allentown, PA 18101-1179

   Contact Person: Jerome S. Fields, REM, Senior Environmental Scientist-Nuclear

   Telephone: (610) 774-7889 Fax: (610) 774-7782 E-mail: jsfields@pplweb.com

2. a. **Location of sources:**

   State: Pennsylvania County: Luzerne

   Municipality: Salem Township

   b. You must attach a copy of a USGS 7 1/2 Minute Quadrangle map indicating location of proposed intake(s), all existing project sources, and any water storage facilities.

   ATTACHMENT A to this application is an electronically formatted copy of adjoining USGS quadrangles Berwick (PA) and Sybertsville (PA) showing the locations of the facilities, water resources and discharges associated with this application.

3. **Purpose of withdrawal:** The Susquehanna Steam Electric Station (SES) is an existing, two unit, 2,380-megawatt electrical (MWe), nuclear-fueled electric generating station. An Extended Power Uprate (EPU) is planned for the Susquehanna SES to be implemented in stages from the second quarter 2008 through the second quarter 2010. The EPU is expected to increase the station output to approximately 2,600 MWe.

   The Susquehanna River is the primary source of water for the Susquehanna SES and provides essentially all of the cooling water associated with the generation of electricity. The withdrawal of surface water from the Susquehanna River for commercial operation of the Susquehanna SES began in 1983. Water is pumped from the river at an intake

adjacent to the station. The River Intake Structure contains four pumps, each rated at 13,500 gpm. The estimated maximum daily withdrawal by the existing station is approximately 58 MGD. The maximum daily withdrawal from the river is expected to gradually increase to approximately 65 MGD as the EPU is implemented; however, this application is being submitted for 66 MGD. The increased withdrawal will not require modification to the intake, the pumps or the cooling system.

4. Source(s) from which withdrawal is being requested:

Name of Source	Quantity of Withdrawal Requested		Safe Yield or Q7-10 Low Flow[2] at Point of Taking (mgd[1])	Drainage Area (square miles)	Location of Taking Point (latitude/longitude)
	Maximum 30-Day Average (mgd[1])	Maximum Day (mgd[1])			
Susquehanna River	NA	66 MGD Note 3	Note 4	Approx. 10,200 sq. miles Note 5	lat: N41°05'12.4" long: W76°07'53.2"
Total	NA	66 MGD Note 3	Note 4		

[1] mgd = million gallons per day

[2] Use acceptable hydrologic practices in determining 7-day, 10-year low flow.

[3] Quantities shown do not include allowance for measurement error.

[4] A Q7-10 flow of 814 cfs (525 MGD) at the USGS gage at Wilkes-Barre (No. 01536500) has been used by the Commission in determining the need for consumptive use compensation releases from Cowanesque Reservoir. The Wilkes-Barre gage is approximately 20 miles upstream from the SSES river intake. At the Wilkes-Barre gage, the 90-percent exceedance flow is 1,670 cfs, the minimum seven-day low flow is 546 cfs (September 1964), and the minimum daily flow is 532 cfs (September 1964).

[5] The drainage area at the Wilkes-Barre gage is 9,960 sq. miles. The drainage area at the USGS gage at Danville (No. 01540500), approximately 30 miles downstream, is 11, 200 sq. miles.

5. Prior or pending state or federal permits:

Permit Name	Status[1]	Agency	Permit Issue Date	Permit Number
Safe Drinking Water Permit	Prior	PaDEP	2/17/89	2400994
	"	"	12/4/85	2400995
	"	"	12/4/85	2400999
	"	"	12/4/85	2400938
Dams Permit	N/A			
Encroachment or Water Obstruction Permit (intake and discharge diffuser)	Prior	USACOE & PaDEP	9/13/06	CENAB-OP-RPA 06-10107-P12; E40-195
	Prior	"	8/31/88	CENAB-OP-RR 87-1767-4;E40-192
Water Allocation/Appropriation	Prior	SRBC	3/9/95	19950301 Note 3

Permit				
Other (NPDES)	Prior	PaDEP	9/1/05	NPDES PA-0047325
Other (Operating license)	Prior Pending	USNRC USNRC	7/17/82 3/23/84 Note 2	NPF-14 NPF-22 NPF-14 NPF-22

[1] If not applicable list (NA); if pending, (P); if required but not applied for, (R)

[2] An application was submitted to the US Nuclear Regulatory Commission on Sept. 13, 2006 to renew operating licenses NPF-14 and NPF-22 for an additional 20 years.

[3] See also contract between the Commission and Pennsylvania Power & Light Company for development of water supply storage in Cowanesque Reservoir, dated June 30, 1986.

6. **Show by <u>calculation</u> how the "Quantity of Withdrawal Requested" was determined.** Describe how sufficient this allocation will be in meeting the future needs of this project. Describe alternative sources of supply considered in lieu of requesting a new or increased allocation from the sources listed in Application Section 4. (Attach additional sheets, as necessary.)

See ATTACHMENT B.

7. **Existing and projected total water use:**

Total Project Water Usage[1]	Existing (mgd)[2]	Projected (mgd)[3] for Design Year 2008 and beyond
Average Daily Water Demand	42 MGD Note 5	46 MGD in 2008 49 MGD in 2009 52 MGD in 2010 and beyond Notes 7 and 8
Maximum Daily Water Demand	58 MGD: Note 6	60 MGD in 2008 64 MGD in 2009 65.35 MGD in 2010 and beyond Notes 7 and 9
System Capacity[4]	The river intake has four pumps, each rated at 13,500 gpm. However, the system capacity with all four pumps operating is approximately 45,000 gpm but can vary depending on river conditions and the conditions of the pumps.	The existing system capacity is adequate and will not need to be increased for the EPU.

[1] Project water usage should be on an annual basis, unless the application is for a seasonal operation. For seasonal uses, indicate the duration of the use (the number of months on which the average is based).

[2] For new projects, the existing use should be the proposed use during the first year of operation.

[3] The projected use should be for 25 years in the future (design year). If the project duration is less than 25 years, indicate the year for which projections were made.

[4] The existing system capacity should not include the proposed sources unless the application is for a new project having no prior withdrawal.

[5] Average usage, years 2002-2005: cooling tower water loss (29.5 MGD, from cooling tower performance diagram) + average cooling tower blowdown (11.8 MGD, metered) + emergency spray pond makeup (0.4 MGD, estimated) = 41.7 MGD.

[6] Maximum daily usage, years 2002-2005: cooling tower water loss (40 MGD, from cooling tower performance diagram) + maximum cooling tower blowdown (17.3 MGD, metered) + emergency spray pond makeup (0.4 MGD, estimated) = 57.7 MGD.

[7] Estimates do not include allowance for measurement error.

[8] Annual average consumptive water use upon completion of the EPU is expected to be 37 MGD.

[9] Maximum daily consumptive water use upon completion of the EPU is expected to be 48 MGD.

8. **Existing sources of water:**

a. **Wells – Well system began operation in 1974 to provide domestic water supply and (wells TW-1 and TW-2) miscellaneous station purposes excluding condenser cooling. The EPU will not affect the withdrawal or use of groundwater at the Susquehanna SES.**

Well Identification	Frequency of Use[1]	Purpose[2]	Well Depth (ft)	Cased Depth (ft)	Screened Interval (ft to ft)	Pump Capacity (mgd)	Number of Days Used During Calendar Year	Metered (yes/no)	Average Daily Withdrawal (mgd)	Safe Yield MGD[3]
PWS2400994 (TW-1)	E	Domestic + Misc Station	75	Unknown	Unknown	0.07 (50 gpm)	0	Yes	0	0.072
PWS2400994 (TW-2)	R	Domestic + Misc Station	75	Unknown	Unknown	0.22 (150 gpm)	365	Yes	0.094	0.216
PWS2400999	R	Domestic - Energy Information Center	100	Unknown	Unknown	N/A	365	No	Note 4	0.022
PWS2400995	R (Apr-Oct)	Domestic - Riverlands	105	Unknown	Unknown	N/A	200	No	Note 4	0.043
PWS2400938	R	Domestic - West Bldg.	55	Unknown	Unknown	N/A	365	No	Note 4	0.043
								Total	<0.114	0.396

[1] Indicate if well is used on Regular (R), Auxiliary (A), or Emergency (E) basis.
[2] Indicate purpose such as potable supply, non-contact cooling, or water quality remediation.
[3] Provide method of computation or submit copies of pumping test data. Data listed in PaDEP Brief Description forms; method(s) not listed.
[4] The combined withdrawal from these three nearby wells is estimated to be below 0.02 MGD. These wells are not used for station operation but for domestic use at various nearby facilities associated with the station.

b. Other sources of water (stream intakes, interconnections, reservoirs, springs, etc.):

Name	Description	Frequency of Use[1]	Purpose[2]	Drainage Area, If Applicable (square miles)	Existing Pump Capacity[3] (mgd)	Number of Days Used During Calendar Year	Metered (yes/no)	Average Daily Withdrawal (mgd)	Safe Yield or Q7-10 Low Flow[4] (mgd)
None									
							Total		

[1] Indicate if source is used on Regular (R), Auxiliary (A), or Emergency (E) basis.
[2] Indicate purpose such as potable supply, process water, non-contact cooling, or irrigation.
[3] If gravity-fed, give maximum hydraulic capacity and label as such.
[4] Provide method of computation for 7-day, 10-year low flow for run-of-stream sources.

9. Raw water ponds, lakes, intake dams, and storage dams (existing and/or proposed):

Name	Year Constructed	Year of Last Sedimen-tation Survey	Storage Capacity (mg)	Surface Area (acres)	Drainage Area (sq mi)	Release Works[1] (yes)	Release Works[1] (no)
Lake Took-A-While Note 2	1978-1979	March 1999	Est. 30	Est. 30 Note 3	Estimated 0.53		Note 4

[1]Does the dam have facilities to provide a release of water to the stream when water is not flowing over the spillway or top of dam? If yes, describe length, diameter, depth, valving, etc.
[2] Lake Took-A-While is located within the Riverlands Recreation Area and is solely a recreation facility.
[3] Surface area has varied in different reports from 24 to 35 acres. For the License Renewal environment report 30 acres was used for area.
[4] The spillway has stop logs that can be removed and replaced manually to control lake level.

10. Preparer:

Name: Jan C. Phillips, P.E.

Address: 2611 Walnut Street

Allentown, PA 18104-6230

Phone: (610) 821-0160 Fax: (610) 821-0160

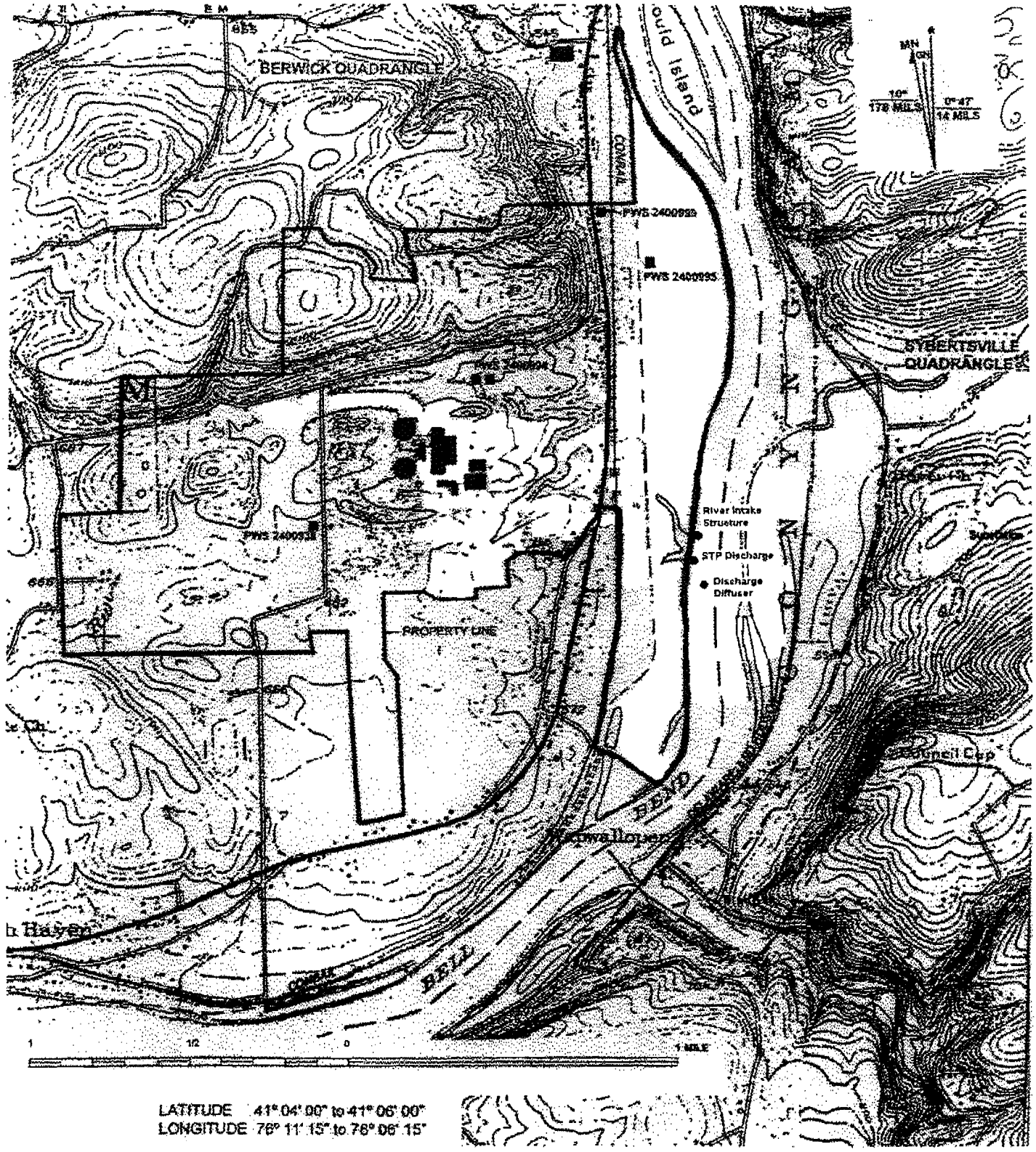
Signature _____

Date: December 19, 2006 E-mail Address: jcphllps@enter.net

11. Applicant:

Name: Britt T. McKinney, Sr. Vice President & Chief Nuclear Officer

Signature _____ Date: December 20, 2006



LATITUDE 41° 04' 00" to 41° 06' 00"
LONGITUDE 76° 11' 15" to 76° 06' 15"

Attachment A
Topographic Map
SSES

ATTACHMENT B

PPL Susquehanna, LLC
Application to SRBC for Surface Water Withdrawal
December 2006

Application Section 6
Determination of Quantity of Withdrawal Requested

The Quantity of Withdrawal Requested is 66 MGD on a maximum day. This amount is the sum, to the next higher MGD, of (a) the estimated maximum daily water loss from the cooling towers (evaporation plus drift allowance) following full implementation of the Extended Power Uprate, (b) the cooling tower blowdown rate associated with the estimated maximum daily cooling tower loss, and (c) the estimated makeup flow to the emergency spray pond, less (d) a small contribution of well water to the cooling water flow. The Quantity of Withdrawal Requested does not include an allowance for flow measurement error.

Cooling tower evaporation is determined from the designer's cooling tower performance diagram (Exhibit A hereto). Cooling tower evaporation as a percentage of the cooling tower water flow is a function of wet-bulb temperature, relative humidity and cooling range. The post-EPU maximum daily consumptive water use has been determined assuming the following conditions:

Wet-bulb temperature (WBT): 77.0°F
Relative humidity (RH): 40 percent
Cooling range: 35.7 F degrees
Cooling tower water flow: 511,000 gpm per tower

The selected environmental conditions (WBT and RH) are considered to be conservative for estimating the maximum daily evaporative loss.

The cooling tower water flow combines circulating water flow (484,000 gpm) and service water flow (27,000 gpm). The cooling range (35.7 F degrees) was calculated based on the combined heat contributions of the circulating and service water flows.

From Exhibit A, for the assumed WBT, RH and cooling range, the rate of evaporation expressed as a percentage of the cooling tower water flow is 3.22 percent. Thus, the evaporative loss per cooling tower expressed in gpm is:

Evaporative loss per tower = 511,000 gpm x 0.0322 = 16,454 gpm.

The cooling tower manufacturer's estimate of the rate of cooling tower drift loss is 0.02 percent of the cooling tower water flow. Thus, the drift loss per cooling tower expressed in gpm is:

Drift loss per tower = 511,000 gpm x 0.0002 = 102 gpm.

Thus, the estimated post-EPU maximum daily water loss from the two cooling towers combined, expressed in MGD, is:

2 x (16,454 gpm + 102 gpm) x 0.00144 MGD/gpm = 47.68 MGD.

Cooling tower blowdown comprises most of the non-consumptive water use at the Susquehanna SES. The blowdown rate is a function of water chemistry, among other things. The cooling tower blowdown rate is approximated as:

Blowdown per tower = [evaporation / (concentration factor – 1)] – drift.

Assuming a concentration factor of 3.7, the blowdown rate per tower expressed in gpm is:

[16,454 gpm / (3.7 – 1)] – 102 gpm = 5,992 gpm.

Thus, the estimated blowdown rate corresponding to the maximum daily evaporative loss for the two towers combined, expressed in MGD, is:

2 x 5,992 gpm x 0.00144 MGD/gpm = 17.26 MGD.

The makeup flow to the emergency spray pond is estimated to be 300 gpm. Expressed in MGD, the estimated emergency spray pond makeup is:

300 gpm x 0.00144 MGD/gpm = 0.43 MGD.

A flow of approximately 0.02 MGD originating from the station wells is added to the cooling water system.

Thus, the total post-EPU maximum daily surface water withdrawal is estimated as:

47.68 MGD	Cooling tower evaporation and drift loss
+ 17.26 MGD	Cooling tower blowdown
+ 0.43 MGD	Emergency spray pond makeup
- 0.02 MGD	Flow from station wells
= 65.35 MGD	Maximum daily surface water withdrawal

or 66 MGD, to the next higher MGD.

The "Quantity of Withdrawal Requested" shown in the table of Item No. 4 of the application is the 66 MGD estimated maximum daily surface water withdrawal rate. This 66 MGD is anticipated to be adequate for the foreseeable life of the Susquehanna SES.

No alternative sources for the amount of additional water needed by the Susquehanna SES following the EPU were considered, nor would any be practicable.

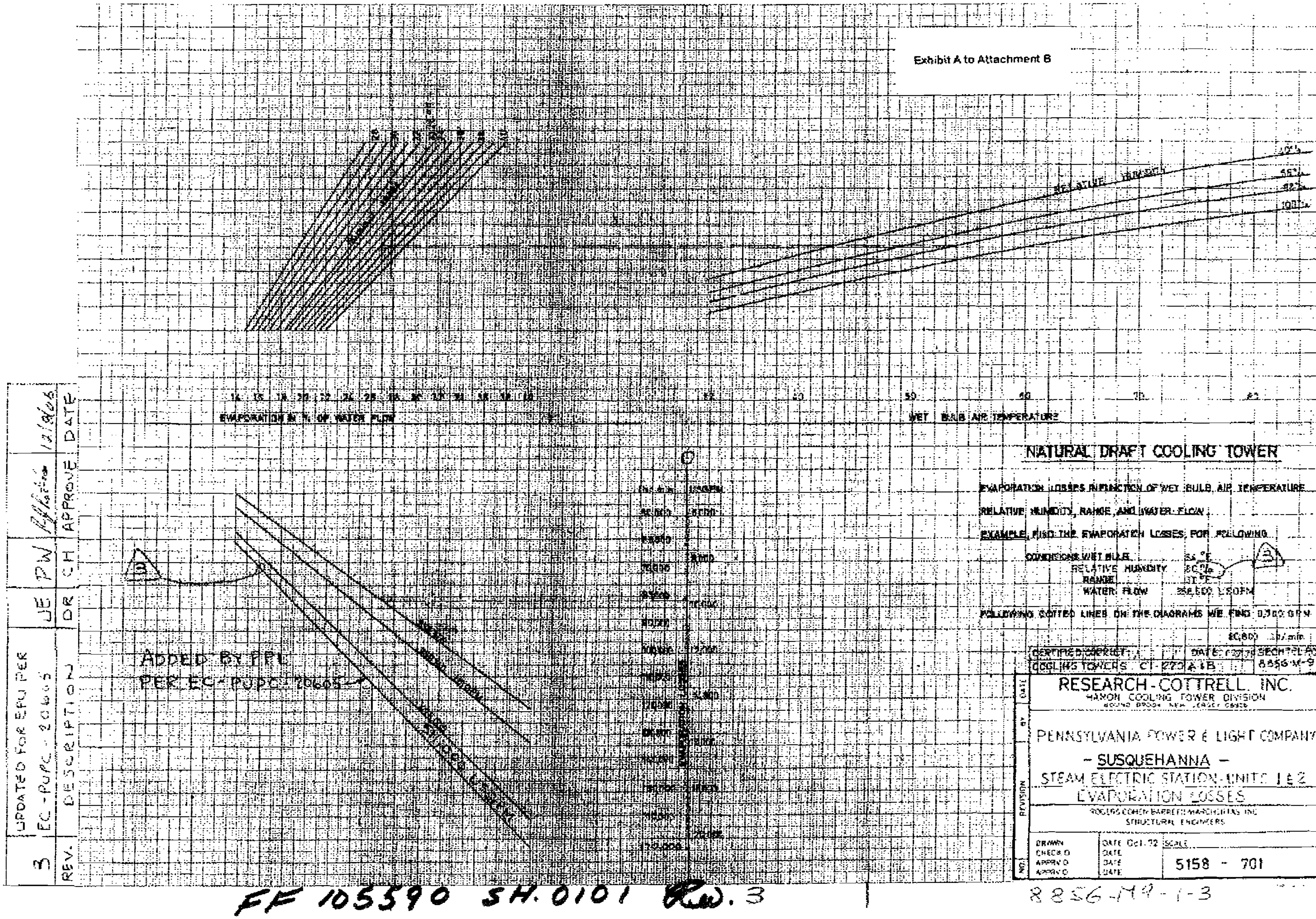


Exhibit A to Attachment B
RELATIVE HUMIDITY
EVAPORATION IN % OF WATER FLOW
WET BULB AIR TEMPERATURE
NATURAL DRAFT COOLING TOWER
EVAPORATION LOSSES IN FUNCTION OF WET BULB AIR TEMPERATURE
RELATIVE HUMIDITY, RANGE AND WATER FLOW
EXAMPLE: FIND THE EVAPORATION LOSSES FOR FOLLOWING
CONDITIONS: WET BULB
RELATIVE HUMIDITY
RANGE
WATER FLOW
FOLLOWING DOTTED LINES ON THE DIAGRAMS WE FIND
ADDED BY PPL
PER EC-PUPC-20665
RESEARCH-COTTRELL, INC.
HAMON COOLING TOWER DIVISION
PENNSYLVANIA POWER & LIGHT COMPANY
- SUSQUEHANNA -
STEAM ELECTRIC STATION-UNITS 1 & 2
EVAPORATION LOSSES
5158 - 701
3
UPDATED FOR EPU PER EC-PUPC-20665
JE
PW
12/8/06
REV.
DESCRIPTION
DR
CH
APPROVE
DATE
FF 105590 SH.0101 Rev. 3
8856-M9-1-3

ATTACHMENT C

PPL Susquehanna, LLC
Application to SRBC for Surface Water Withdrawal
December 2006

Proposed Susquehanna SES Water Use Monitoring Plan

This Plan provides for the metering and measurement of data necessary to determine, for reporting to the Commission, the following water quantities at the Susquehanna SES:

- Daily cooling tower water loss (evaporation and drift loss) for each generating unit; and
- Daily surface water withdrawal from the Susquehanna River.

Exhibit A to this Plan is a station water flow schematic diagram ("SSES Water Flow Diagram – Post-EPU Maximum") showing the facilities and flows indicated herein.

The daily surface water withdrawal is determined from the estimated daily cooling tower water loss, the metered cooling tower blowdown, and the estimated makeup flow to the emergency spray pond.

COOLING TOWER WATER LOSS

Meteorological Data

PPL maintains and operates a meteorological station on the Susquehanna SES site. Wet-bulb temperature (WBT) and Relative humidity (RH) are calculated using temperature and dew point. Daily averages of hourly temperature and dew point readings are used to calculate daily WBT and RH. Temperature is accurate within $\pm$0.9°F and dew point to $\pm$2.7°F.

Cooling Tower Water Flow

The total water flow to each cooling tower is the sum of the respective generating unit's circulating water flow (approximately 95 percent) and the unit's service water flow (approximately 5 percent). The rate of circulating water flow is measured continuously, by ultrasonic metering at Unit 1 and by metering power inflow to the circulating water pumps at Unit 2. The rate of service water flow is assumed to be a constant 27,000 gpm at each unit. Measurement of the circulating water flow is accurate to within $\pm$2.5 percent.

Cooling Range

The cooling range is the difference between the hot-water temperature and the cold-water temperature in the cooling water flow. The cooling range at Susquehanna SES is determined from the hot-water temperature and the cold-water temperature in the circulating water flow; this assumes that the temperature difference in the circulating water flow is representative of the temperature difference in the service water flow. The hot-water temperature and the cold-water temperature in the circulating water flow are measured continuously. According to manufacturer specifications, the temperature measurements are accurate to within ±2 percent.

Cooling Tower Evaporation

PPL believes that the most accurate way to estimate cooling tower evaporation at the Susquehanna SES is by use of the cooling tower performance diagram (Exhibit A to ATTACHMENT B of this application). The cooling tower performance diagram was prepared by the cooling tower designer and updated by PPL to indicate the expected post-EPU maximum cooling tower water flow rate (511,000 gpm per generating unit). The diagram permits cooling tower evaporation (gpm) to be estimated from the values of WBT, RH, cooling range and cooling water flow rate. To estimate daily evaporation, the daily average WBT, RH, cooling range and cooling water flow rates are used.

Cooling Tower Drift Loss

The cooling tower manufacturer estimates that drift loss rate is equal to 0.02 percent of the cooling tower water flow rate. The nominal EPU cooling tower water flow rate is 511,000 gpm per unit, so that the estimated drift rate is 102 gpm per tower. For purposes of estimating actual loss, it will be sufficiently accurate to assume a constant drift loss of 100 gpm or 0.15 MGD per tower when the respective generating unit is on line.

Total Cooling Tower Water Loss

The total cooling tower water loss for each generating unit when operating is thus the estimated evaporation loss plus an allowance of 0.15 MGD for drift loss.

COOLING TOWER BLOWDOWN

Cooling tower blowdown represents nearly all of the non-consumptive water use at the Susquehanna SES. Blowdown from each cooling tower is metered continuously. Cooling tower blowdown flow metering is accurate to within ±2.5 percent. Cooling tower blowdown is discharged to the river downstream from the station.

EMERGENCY SPRAY POND MAKEUP

The emergency spray pond has a surface area of approximately eight (8) acres. The estimated makeup flow to the emergency spray pond is 300 gpm, or approximately 0.43 MGD. Most of this flow is discharged from the pond to the cooling tower blowdown line downstream of the cooling tower blowdown meters. Emergency spray pond levels are monitored, and discharge can be monitored at an overflow weir. A small portion of the emergency spray pond makeup replaces evaporation from the pond.

SURFACE WATER WITHDRAWAL

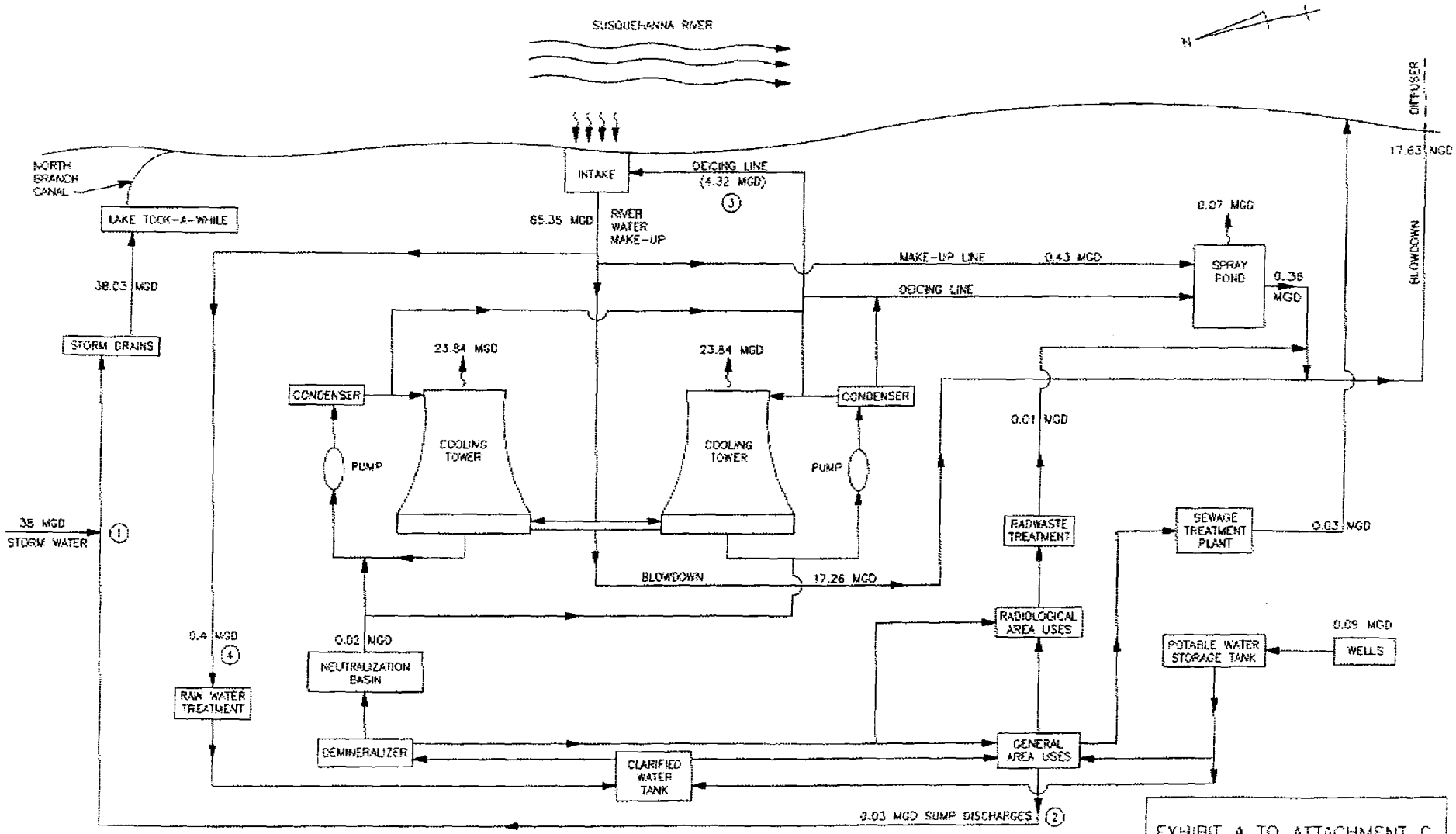
Each generating unit's total water usage is the sum of its cooling tower water loss (consumptive water use) and cooling tower blowdown (non-consumptive water use). The total station surface water withdrawal is estimated as the combined water usage of the two generating units plus an allowance of 0.4 MGD for the emergency spray pond makeup.

DATA

Data monitored under this Plan are continuously entered in the Susquehanna SES Plant Integrated Computer System and readily integrated into daily averages. Final daily quantities of the data to be recorded and reported (below) are organized and/or derived by spreadsheet. The relationships depicted on the cooling tower performance diagram are programmed in spreadsheet format to facilitate estimating cooling tower evaporation from the relevant daily average data.

RECORD-KEEPING AND REPORTING

PPL will keep daily records of (a) the cooling tower water loss for each generating unit, (b) the cooling tower blowdown for each generating unit, and (c) the total station surface water withdrawal, all estimated or measured as described herein, and will report the daily cooling tower water loss and the daily total station surface water withdrawal amounts, expressed in million gallons, to the Commission each quarter.



1. STORM EVENT
2. WHEN OUTSIDE SUMPS ARE DISCHARGED
3. DEICING LINE WATER IS RECIRCULATED BETWEEN THE RIVER INTAKE AND CIRCULATING WATER SYSTEM FROM MID-NOV. THROUGH MID-MARCH. IT IS NOT INCLUDED IN THE STATION'S WATER BALANCE.
4. APPROXIMATELY ONE MONTH PER YEAR AND IS NOT INCLUDED IN STATION'S WATER BALANCE.

EXHIBIT A TO ATTACHMENT C
SSES WATER FLOW DIAGRAM
POST-EPU MAXIMUM

EXHIBIT 2

Exelon Generation Company, LLC
Dresden Nuclear Power Station
6500 North Dresden Road
Morris, IL 60450-9765

www.exeloncorp.com

Exelon Nuclear

10 CFR 50.73

January 19, 2005

SVPLTR: #05-0001

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

Dresden Nuclear Power Station, Units 2 and 3
Facility Operating License Nos. DRP- 19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Licensee Event Report 2004-006, "Units 2 and 3 Main Turbine Generator Rotor Cracks"

Enclosed is Licensee Event Report 2004-006, "Units 2 and 3 Main Turbine Generator Rotor Cracks," for Dresden Nuclear Power Station. These events are being reported as a Voluntary Licensee Event Report in accordance with the guidance contained in NUREG 1022, Revision 2, "Event Reporting Guidelines 10 CFR 50.72 and 50.73."

Should you have any questions concerning this report, please contact Pedro Salas, Regulatory Assurance Manager, at (815) 416-2800.

Respectfully,

Danny G. Bost
Site Vice President
Dresden Nuclear Power Station

Enclosure

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Dresden Nuclear Power Station

IE22

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Dresden Nuclear Power Station Unit 3	05000249	1 OF 3

4. TITLE
Units 2 and 3 Main Turbine Generator Rotor Cracks

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	31	2004	2004	- 006 -	00	01	19	2005	Dresden Unit 2	05000237
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE
5

10. POWER LEVEL
000

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☒ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Dresden Nuclear Power Station – George Papanic Jr.	(815) 416-2815

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	TB	GEN	G080	Y	NA				

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

Dresden Nuclear Power Station, Units 2 and 3, had been experiencing increasing trends in vibration levels on both Main Turbine Generators, bearings 9 and 10 since May 2004. Numerous efforts and reviews during the summer and fall of 2004 were not successful in resolving the vibration. Dresden Unit 3 entered a refueling outage in October 2004 and as part of the outage scope, the Main Turbine Generator was inspected. On October 31, 2004, the inspection identified that the Unit 3 Main Turbine Generator Rotor had a crack in the shaft near the rotor coupling. This finding resulted in the decision to remove Unit 2 from service and conduct an inspection of its rotor shaft. On November 1, 2004, a crack was identified on the Unit 2 rotor shaft. The Unit 2 crack was in the same general location and similar configuration as the Unit 3 crack. These events are being reported as a Voluntary Licensee Event Report in accordance with the guidance contained in NUREG 1022, Revision 2, "Event Reporting Guidelines 10 CFR 50.72 and 50.73."

The root cause of these events was determined to be intermittent oscillating torsional loading on the generator rotor, which produced a torsional fatigue failure mode. The cause of the intermittent oscillating torsional loading is indeterminate. The cause and source of the intermittent oscillating torsional loading will be investigated through analytic modeling and data acquisition during plant operation.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBE	
Dresden Nuclear Power Station Unit 3	05000249	2004	-- 006 --	00	2 OF 3

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Dresden Nuclear Power Station Units 2 and 3 are General Electric Company Boiling Water Reactors with a licensed maximum power level of 2957 megawatts thermal. The Energy Industry Identification System codes used in the text are identified as [XX].

A. Plant Conditions Prior to Event:

Unit: 03 Event Date: 10-31-2004
Reactor Mode: 5 Mode Name: Refueling Power Level: 0 percent
Reactor Coolant System Pressure: 0 psig

B. Description of Event:

Dresden Nuclear Power Station, Units 2 and 3, had been experiencing increasing trends in vibration levels on both Main Turbine Generators [TA][TB], bearings 9 and 10 since May 2004. The Main Turbine Generator bearing 9 is located between the electric generator and the low-pressure turbine. Bearing 10 is located between the electric generator and the exciter [TL]. Numerous efforts and reviews during the summer and fall of 2004 were not successful in resolving the vibration.

Dresden Unit 3 entered refueling outage D3R18 on October 26, 2004. As part of the outage scope, the Main Turbine Generator was internally inspected. On October 31, 2004, the inspection identified that the Unit 3 Main Turbine Generator Rotor had a significant crack in the Main Turbine Generator Rotor shaft near the turbine end coupling. The crack was approximately 13 inches in length. This finding resulted in the decision to remove Unit 2 from service and conduct an inspection of its rotor shaft. On November 1, 2004, a crack was identified on the Unit 2 rotor shaft. The Unit 2 crack was approximately 10 inches in length, in the same general location and similar configuration as the Unit 3 crack. These cracks resulted in a change in the Main Turbine Generator Rotor shaft stiffness, which caused the increasing trend in bearing vibration.

These events are being reported as a Voluntary Licensee Event Report (LER) in accordance with the guidance contained in NUREG 1022, Revision 2, "Event Reporting Guidelines 10 CFR 50.72 and 50.73."

C. Cause of Event:

The root cause of the rotor cracks was determined to be intermittent oscillating torsional loading on the generator rotor, which produced a torsional fatigue failure mode. The cause of the intermittent oscillating torsional loading is indeterminate.

Dresden Unit 2 and Unit 3 have identical Main Turbine Generators manufactured by General Electric Company. The Main Turbine Generator Rotors are NiMoV alloy steel forgings that were fabricated to GE Specification B50A375A70-S4 in the mid-1960's.

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBE	
Dresden Nuclear Power Station Unit 3	05000249	2004	-- 006 --	00	3 OF 3

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* (17)

The Unit 2 and Unit 3 cracks initiated in one of the two generator rotor shaft keyways under the turbine end coupling. The coupling is an interference fit to the shaft. The assessment of the metallurgical examination identified that each crack propagated at a 45-degree angle in a spiral fashion around the shaft with approximately 200 beach marks. The beach marks are indications where the cracks stopped and started again. The assessment concluded that intermittent oscillating torsional loads above the material fatigue endurance limit caused the crack propagation.

Dresden sent both Main Turbine Generator Rotors offsite for the inspections and to have the cracked end of the rotor shaft replaced with a new stub-shaft. A contributing cause to the reduced shaft material fatigue endurance limit was fretting. The ability of the shaft material to withstand fretting has been significantly increased by a redesign of the shaft keyway to eliminate stress risers and to increase shaft torsional capacity by an improved coupling shrink fit.

D. Safety Analysis:

The safety significance of the event is minimal. The Main Turbine Generator is not a safety related component and it is not credited in any Dresden accident analyses. Additionally, an engineering assessment concluded that Main Turbine Generator vibration levels would have exceeded operational limits prior to reaching critical crack size and the generator would have been removed from service prior to potential rotor failure. Therefore, the consequences of this event had minimal impact on the health and safety of the public and reactor safety.

E. Corrective Actions:

Dresden sent both Main Turbine Generator Rotors offsite for the inspections and to have the cracked end of the rotor shaft replaced with a new stub-shaft. A contributing cause to the reduced shaft material fatigue endurance limit was fretting. The ability of the shaft material to withstand fretting has been significantly increased by a redesign of the shaft keyway to eliminate stress risers and to increase shaft torsional capacity by an improved coupling shrink fit.

F. Previous Occurrences:

A review of Dresden Nuclear Power Station LERs identified no similar events. Additionally, a review of LERs from other nuclear plants did not identify any similar events.

G. Component Failure Data:

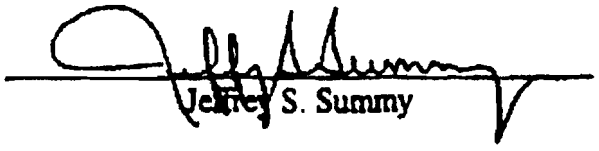
GE Main Turbine Generator Rotor shaft

EXHIBIT 3

Interim Status Report
Independent Root Cause Analysis Assessment
of the Detroit Edison
Fermi 2 Turbine - Generator Event
on December 25, 1993

July 26, 1994

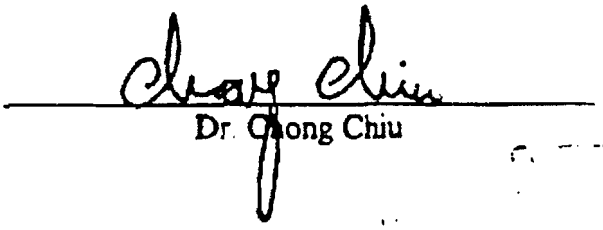
Prepared by:



Jeffrey S. Summy

Principal Investigators:
Mr. Donnell Kidder
Mr. Ralph Ortolano
Dr. M.S. Mostafa

Reviewed by:



Dr. Chong Chiu

Table of Contents

EXHIBIT 4

JAN 07 1992

Docket No. 50-311

Mr. Steven E. Miltenberger
Vice President and Chief Nuclear Officer
Public Service Electric and Gas Company
P. O. Box 236
Hancocks Bridge, New Jersey 08038

Dear Mr. Miltenberger:

Subject: NRC Region I Augmented Inspection Team (AIT) Review of the November 9, 1991 Salem Unit 2 Turbine-Generator Overspeed and Fire Event

This letter transmits the results of the NRC Region I Augmented Inspection Team (AIT) Report for the period between November 10 and December 3, 1991, relative to our review of the Unit 2 turbine overspeed event and the resultant damage to the turbine and generator. The preliminary findings of this inspection were previously reported to you at a public exit meeting on December 3, 1991 at the Salem and Hope Creek Nuclear Generating Station Processing Center.

The areas examined during this inspection are described in the enclosed report. While this event resulted in severe damage to the Salem Unit 2 turbine-generator system, the occurrence did not result in any radiological release or impairment of nuclear safety-related systems, structures, or components. The plant staff, including its management, effectively responded to this event by assuring safe reactor shutdown and rapid suppression and control of the generator fire. Further, your management staff demonstrated competent technical direction and control of subsequent event recovery and investigation efforts. We were particularly impressed by the scope and depth of your investigation effort and the direct and candid nature of your conclusions.

The AIT concluded that the proximate cause of this event was the failure of three separate solenoid valves to operate as designed to control overspeed and effect turbine trip. As a consequence of this malfunction, following a reactor trip, steam was re-admitted to the turbine which caused the turbine-generator unit to overspeed. The overspeed condition caused severe damage to the low pressure turbine and resulted in the destruction of the generator, including a hydrogen and oil fire. Contributing causes included insufficient preventive maintenance and surveillance testing of the solenoid valve-actuated turbine control systems. Additional contributing factors included management decisions relative to the planned replacement of the solenoid valves (based on component failures observed in Salem Unit 1) and the inadequate resolution of previous test results on October 20, 1991 that indicated improper functioning of the Salem Unit 2 overspeed control system.

Within thirty days of receipt of this letter, please respond to the findings in Section 7.0 of this report that are denoted as "Contributing Causal Factors." Your response should address an assessment of these items, including any actions taken or planned. Additionally, please provide the final results and recommendations of the event investigation effort as performed by your own Significant Event Response Team. You will be informed of any NRC enforcement action relative to this matter in separate correspondence.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and the enclosure will be placed in the NRC Public Document Room. The response directed by this letter is not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Public Law No. 96-511.

We acknowledge and appreciate your excellent cooperation with our AIT during this period.

Sincerely,

[illegible]

Charles W. Hehl, Director
Division of Reactor Projects

Enclosure: NRC Region 1 Inspection Report 50-311/91-81

cc w/encl:
S. LaBruna, Vice President, Nuclear Operations
C. Schaefer, External Operations - Nuclear, Delmarva Power & Light Co.
C. Vondra, General Manager - Salem Operations
F. Thomson, Manager, Licensing and Regulation
L. Reiter, General Manager - Nuclear Safety Review
J. Robb, Director, Joint Owner Affairs
A. Tapert, Program Administrator
R. Fryling, Jr., Esquire
M. Wetterhahn, Esquire
J. Isabella, Director, Generation Projects Department, Atlantic Electric Company
D. Wersan, Assistant Consumer Advocate, Office of Consumer Advocate
Lower Alloways Creek Township
K. Abraham, PAO, (24 copies)
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Jersey

CERTIFICATE OF SERVICE

I hereby certify that on May 11, 2007, a copy of Eric Joseph Epstein's Petition for Leave to Intervene, Request for Hearing, and Contentions regarding the matter of the PPL Susquehanna LLC Proposed Amendment Requests for the Susquehanna Steam Electric Station's 1 & 2 Would Increase Thermal Power to 3,952 Mega-Watts Which is 20% Above the Original Rated Thermal Power (RTP) 3293 MWt, And Approximately 13% Above the Current RTP of 3,489 MWt, Docket Nos. 50-387 PLA-6110 and 50-388 was sent via electronic mail and by overnight delivery with tracking numbers to:

Office of the Secretary
U.S. Nuclear Regulatory Commission
16th Floor
One White Flint North
11555 Rockville Pike,
Rockville, Maryland 20852
Attn: Rulemaking and Adjudications Staff

Office of the Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Attn: Rulemaking and Adjudications Staff

Office of the General Counsel
US NRC
Washington, DC 20555-0001

David Lewis, Esquire
PPL c/o Pillsbury, Winthrop et al
2300 N. Street, NW
Washington, DC 20037

Bryan A. Snapp, Esquire
Assoc. General Counsel
PPL Services Corporation
2 North 9th Street
Allentown, PA 18101-1179

May 11, 2007

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Attn: Rulemaking and Adjudications Staff

Office of the Secretary
U.S. Nuclear Regulatory Commission
16th Floor
One White Flint North
11555 Rockville Pike,
Rockville, Maryland 20852
Attn: Rulemaking and Adjudications Staff

Re: PPL Susquehanna LLC Proposed Amendment Requests for the Susquehanna Steam Electric Station's 1 & 2 Would Increase Thermal Power to 3,952 Mega-Watts Which Is 20% Above the Original Rated Thermal Power (RTP) 3,293 MWt, And Approximately 13% Above the Current RTP of 3,489 MWt, Docket Nos. 50-387 PLA-6110 and 50-388

Dear Sir or Madam:

Please find enclosed for filing in the above-stated matter Eric Joseph Epstein's Petition for Leave to Intervene, Request for Hearing, and Contentions in the above-captioned matter.

Thank you for your attention to this matter.

Respectfully submitted,

Eric Joseph Epstein
4100 Hillsdale Road
Harrisburg, PA 17112
(717)-541-1101 Phone

cc: Certificate of Service
Exhibits 1, 2, 3 & 4