BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :

Docket No. 50-387

PENNSYLVANIA POWER & :
LIGHT COMPANY

PROPOSED AMENDMENT No. 181
FACILITY OPERATING LICENSE NO. NPF-14
SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 1

Licensee, Pennsylvania Power & Light Company, hereby files proposed Amendment No. 181 to its Facility Operating License No. NPF-14 dated July 17, 1982.

This amendment contains a revision to the Susquehanna SES Unit 1 Technical Specifications.

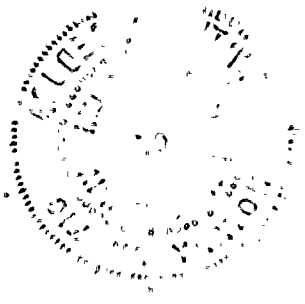
PENNSYLVANIA POWER & LIGHT COMPANY
BY:

R. G. Byram
Sr. Vice President - Nuclear

Sworn to and subscribed before me
this 2nd of February 1995.

Notary Public

Notarial Seal
Martha C. Sedora, Notary Public
Allentown, Lehigh County
My Commission Expires Jan. 15, 1998
Member, Pennsylvania Association of Notaries



BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :

Docket No. 50-388

PENNSYLVANIA POWER & LIGHT COMPANY :

PROPOSED AMENDMENT No. 135
FACILITY OPERATING LICENSE NO. NPF-22
SUSQUEHANNA STEAM ELECTRIC STATION
UNIT NO. 2

Licensee, Pennsylvania Power & Light Company, hereby files proposed Amendment No. 135 to its Facility Operating License No. NPF-22 dated March 23, 1984.

This amendment contains a revision to the Susquehanna SES Unit 2 Technical Specifications.

PENNSYLVANIA POWER & LIGHT COMPANY
BY:

R. G. Byram
Sr. Vice President - Nuclear

Sworn to and subscribed before me
this 2nd of February 1995.

Notary Public

Notarial Seal
Martha C. Sodora, Notary Public
Allentown, Lehigh County
My Commission Expires Jan. 15, 1998
Member, Pennsylvania Association of Notaries

SAFETY ASSESSMENT

EXTENDED FUEL EXPOSURE

PROPOSED ACTION

Amend the Technical Specifications to document NRC approval to increase the licensed discharge fuel assembly exposure for SPC 9X9-2 fuel from 40 to 45 GWD/MTU.

DESCRIPTION OF CHANGE

The change is attached in marked-up form. It proposes the addition of a reference to the NRC approved PP&L Licensing Topical Report PL-NF-94-005-P-A, "Technical Basis for SPC 9X9-2 Extended Fuel Exposure at Susquehanna SES", dated January 1995, to the list of references in Specification 6.9.3.2.

SAFETY ASSESSMENT

The NRC approved PP&L's mechanical design report PL-NF-94-005-P for use on Susquehanna SES Units 1 and 2 in a Safety Evaluation dated December 15, 1994. As discussed in that report, there were five criteria used to confirm the performance of the extended exposure demonstration assemblies. The inspection of the four assemblies in October, 1994 showed that all five criteria were met, as indicated below:

Extended Exposure Performance Criteria (46.848 GWD/MTU)	Inspection Results	Criteria Met?
Maximum rod oxide thickness is less than 3 mils (78 microns)	41 microns	yes
Fuel rod engaged in upper tie plate	Minimum rod engagement – 0.643 inch	yes
Fuel rod diameter and ovality consistent with SPC data base	Average creepdown – 0.4210 inch (0.70%) Average ovality – 0.0014 inch	yes
Fuel Channel engaged with lower tie plate seal	Channel engagement – 0.3 inch	yes
Rod-to-rod spacing shows no unusual gap closure	No unusual gap closure observed	yes

As requested by the NRC in their December 15, 1994 letter, PP&L reviewed the applicable FSAR design basis events in order to determine the impact of the higher fuel assembly exposure and Linear Heat Generation Rate (LHGR). Increasing the maximum fuel exposure from 40 to 45 GWD/MTU will have a small impact on the core design (i.e., increased enrichment, number, and placement of fuel assemblies). This small change in core design will in turn have a minimal impact on the design basis events.

For each reload cycle, analyses are performed to assure that the new core configuration will meet the appropriate fuel related safety limits. As stated in PL-NF-04-005-P-A, all of the SPC fuel design limits are met for the higher exposure and LHGR. The cycle specific design basis events as described in the NRC approved PP&L Licensing Topical Report PL-NF-90-001-A, "Application of Reactor Analysis Methods for BWR Design and Analysis" (July 1992), will be analyzed each cycle using the higher fuel exposure and LHGR. Small increases in fuel exposure and LHGR do not invalidate either the current approach for selection of the limiting events or the assumptions used in the analysis of specific limiting events.

As part of PP&L's power uprate effort, General Electric (GE) analyzed the Loss of Coolant Accident (LOCA) with the higher fuel exposure and LHGR (NEDC-32071P, "SAFER/GESTR-LOCA Loss of Coolant Accident Analysis for Susquehanna Units 1&2", May 1992); therefore,reanalysis of the LOCA event is not required.

The design basis accidents which result in a radiological release (e.g., LOCA, MSLB, CRDA, and refueling accident) were evaluated in GE NEDC-32161P, "Power Uprate Engineering Report for Susquehanna Steam Electric Station Units 1 and 2", December 1993. The calculated fission product inventory used in these radiological release evaluations was based on a reference core in which all of the fuel is assumed to operate continuously for three years at 4.9 MW per bundle (1.09% of core average). GE stated that the resulting source term is conservative for end-of-cycle core average exposures which are not substantially greater than 29 GWD/MTU. Since the introduction of the extended exposure fuel will not produce end-of-cycle core average exposures substantially greater than 29 GWD/MTU, the source term will remain valid.

The LOCA analysis used the above source term and hence, remains valid for extended exposure fuel. The MSLB analysis assumed coolant activities based on maximum allowable Technical Specification values (and no fuel failures are assumed as a result of the event). Thus, the MSLB analysis is valid for extended exposure fuel. The CRDA and refueling accidents used the above mentioned source term and assumed a 1.5 radial peaking factor. Since the above source term is valid for extended exposure fuel and a radial peaking factor of 1.5 is also conservative for core designs with extended exposure 9X9-2 fuel, the power uprate CRDA and refueling accident analyses also apply to extended exposure fuel.

As part of the NRC's concern on the fuel rod failure threshold for high burnup fuel, the CRDA was reevaluated for a failure threshold of 30 cal/gm (well below the current criterion of 170 cal/gm). The results of the reevaluation, which was approved by the NRC in support of PL-NF-94-005-P-A, show that the radiological releases will remain well within 10CFR100 limits.

Based on the above assessment, the proposed action will not impact the safe operation of Susquehanna SES Units 1 and 2.

NO SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed changes do not:

I. ***Involve a significant increase in the probability or consequences of an accident previously evaluated.***

PP&L's technical basis for increasing the licensed discharge exposure limit as proposed is documented in PL-NF-94-005-P-A. The technical basis includes onsite fuel inspections, fuel design analyses and evaluations, and an in-reactor fuel assembly extended exposure demonstration. In response to NRC concerns on fuel failures at higher exposures, very conservative analyses were performed for the CRDA assuming very low failure thresholds, and offsite dose calculation results were shown to be well within regulatory limits, even at a failure threshold of 30 cal/gm. The NRC has previously reviewed and approved all of the above information, and inspection results have met all approved criteria.

An evaluation of FSAR design basis events was performed to determine the impact of the proposed increase in fuel exposure. The LOCA analysis performed in support of PP&L's Power Uprate efforts incorporated the effects of higher exposure and LHGR. From a radiological release perspective, the Power Uprate evaluations of LOCA, MSLB, CRDA, and refueling accidents each bound the potential impacts of extended exposure fuel.

Those reload analyses deemed necessary to confirm that the above conclusions remain valid will be performed on a cycle-specific basis.

Based on the above, the proposed action will not involve a significant increase in the probability or consequences of an accident previously evaluated.

II. ***Create the possibility of a new or different kind of accident from any accident previously evaluated.***

The proposed action will increase the residence time of fuel within the Susquehanna reactors. The potential consequences of this action remain solely with the fuel's ability to perform within specified limits during the increased duty, and were reviewed in I above. All required evaluations involving fuel impacts have been previously evaluated.

Based on the above, the proposed action cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

III. Involve a significant reduction in a margin of safety.

The proposed action will allow increasing the licensed discharge fuel assembly exposure limit, resulting in increases in the fuel rod LHGR and LHGR for APRM Setpoints, which are controlled via the Technical Specifications and the Core Operating Limits Report.

The discussion in I. above delineates the evaluations performed to support this action. It concludes that neither the probability nor the consequences of events previously evaluated will be affected. Operator performance will not be affected, because the operators only monitor the ratio of the fuel LHGR to the fuel design limit. No other potentially impacted safety margins have been identified.

Based on the above, the proposed change does not involve a significant reduction in a margin of safety.

ENVIRONMENTAL CONSEQUENCES ASSESSMENT

In the Notice of Environmental Assessment and Finding of No Significant Impact for extended burnup fuel use in Commercial LWRs, Federal Register (53 FR 6040), dated February 29, 1988, the NRC concluded that the environmental impacts summarized in Table S-4 of 10 CFR 51.52 for the burnup level of 33 GWD/MTU are conservative and bound the corresponding impacts for burnup levels to 60 GWD/MTU and U-235 enrichments up to 5.0 weight percent. The NRC further concluded that there are no significant adverse radiological or non-radiological impacts associated with the use of extended fuel burnup and/or increased enrichment. A "Finding of No Significant Impact was issued and the NRC determined that an Environmental Impact Statement need not be prepared for actions with the scope of their conclusions.

The proposed license amendment will increase the maximum allowed burnup of the fuel to 45 GWD/MTU, and will not increase the maximum allowable enrichment of the fuel. This action is bounded by the NRC conclusions described above.