December27, 1999

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - LASALLE COUNTY STATION, UNITS 1 AND 2 (TAC NOS. MA6070 AND MA6071)

Dear Mr. Kingsley:

By letter dated July 14, 1999, Commonwealth Edison Company (ComEd, the licensee) submitted a proposed license amendment for LaSalle County Station, Units 1 and 2, to allow the units to operate at an uprated power level of 3489 MWt. The staff has reviewed your request and determined that it needs additional information, as discussed in the enclosed Request for Additional Information (RAI), to complete its review. If there should be any questions regarding this request, please contact me at (301) 415-1322.

Sincerely,

(original signed by)
Donna M. Skay, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosure: RAI

cc: See next page

DISTRIBUTION:

File Center	ACRS
PUBLIC	M. Leach, RIII
PD3 r/f	L. Berry
SBlack	OGC

NRC FILE CENTER COPY

*Input provided by memo dated November 5, 1999; no major revisions
** Input provided by memo dated November 15, 1999; no major revisions

DF01

DOCUMENT NAME: G:\PDIII-2\lasalle\MA6070emeb.RAI.wpd

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

OFFICE	PM:LPD3	LA:LPD3	BC:EMEB	SPLB	SC:LPD3
NAME	DSkay	CMoore	*KManoly	**GHubbard	AMendiola
DATE	12/21/99	12/21/99	11/05/99	11/15/99	12/27/99

OFFICIAL RECORD COPY

PDR ADOCK 05000373

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 27, 1999

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - LASALLE COUNTY STATION, UNITS 1 AND 2 (TAC NOS. MA6070 AND MA6071)

Dear Mr. Kingsley:

By letter dated July 14, 1999, Commonwealth Edison Company (ComEd, the licensee) submitted a proposed license amendment for LaSalle County Station, Units 1 and 2, to allow the units to operate at an uprated power level of 3489 MWt. The staff has reviewed your request and determined that it needs additional information, as discussed in the enclosed Request for Additional Information (RAI), to complete its review. If there should be any questions regarding this request, please contact me at (301) 415-1322.

Sincerely,

Donna M. Skay

Donna M. Skay, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosure: RAI

cc: See next page

cc:

Phillip P. Steptoe, Esquire
Sidley and Austin
One First National Plaza
Chicago, Illinois 60603

Assistant Attorney General
100 W. Randolph St. Suite 12
Chicago, Illinois 60601

U.S. NRC-LaSalle Resident Inspectors Office
2605 N. 21st Road
Marseilles, Illinois 61341-9756

Chairman
LaSalle County Board of Supervisors
LaSalle County Courthouse
Ottawa, Illinois 61350

Attorney General
500 S. Second Street
Springfield, Illinois 62701

Chairman
Illinois Commerce Commission
527 E. Capitol Avenue, Leland Building
Springfield, Illinois 62706

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Commonwealth Edison Company
LaSalle Station Manager
2601 N. 21st Road
Marseilles, Illinois 61341-9757

Robert Cushing, Chief, Public Utilities Division
Illinois Attorney General's Office
100 W. Randolph Street
Chicago, Illinois 60601

Document Control Desk-Licensing
Commonwealth Edison Company
1400 Opus Place, Suite 400
Downers Grove, Illinois 60515

Commonwealth Edison Company
Site Vice President - LaSalle
2601 N. 21st Road
Marseilles, Illinois 61341-9757

Mr. David Helwig
Senior Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Gene H. Stanley
PWR Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Christopher Crane
BWR Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. R. M. Krich
Vice President - Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, Illinois 60515

Commonwealth Edison Company
Reg. Assurance Supervisor - LaSalle
2601 N. 21st Road
Marseilles, Illinois 61341-9757

Ms. Pamela B. Stroebel
Senior Vice President and General Counsel
Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690-0767

REQUEST FOR ADDITIONAL INFORMATION

PROPOSED AMENDMENT FOR POWER UPRATE

LASALLE COUNTY STATION, UNITS 1 AND 2

1. Section 3.3.2 of the referenced topical report states that the load combinations for the current licensing basis of the reactor vessel and internals are the reactor internal pressure difference, main steam line and recirculation line break loss-of-coolant accident (LOCA) loads, seismic and fuel lift loads. Provide an explanation why the asymmetric pressurization loads and the thrust jet loads that are increased for the power uprate were not included in the load combinations for evaluation of the reactor vessel and internal components.

2. In Section 3.3.2.2 of the referenced topical report, an assessment of flow-induced vibration of the reactor internal components due to power uprate is performed to address the increase in steam product in the core, the increase in the core pressure drop, and the increase in the recirculation pump speed. In that assessment, the vibration levels were estimated by extrapolating the recorded vibration data at LaSalle, Unit 1, and by using the General Electric (GE) Nuclear Energy operating experience.

   a. Provide a sample evaluation and the basis for using the operating experience data.

   b. Section 3.3.2.2 states that "the calculations for power uprate conditions confirm that vibrations of all safety related reactor internal components are within the GE acceptance criteria...." Please describe the components evaluated and the GE acceptance criteria.

   c. Provide a sample of the highest-calculated internal component values and the corresponding GE allowable values.

3. Section 3.5 for the reactor coolant pressure boundary (RCPB) piping states that the design adequacy evaluation results show that the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section III, Subsection NB/ND, are satisfied based on current design and licensing Code of record for the piping systems evaluated. It also states that the quantitative evaluation confirming the qualitative results will be completed prior to implementation of the uprated conditions.

   a. Provide the methodology and assumptions used for evaluating the reactor coolant piping and supports for the power uprate.

   b. Provide the calculated maximum stresses and fatigue usage factors, critical locations of piping systems and supports evaluated, allowable stress limits, and the Code and Code edition used in the evaluation for the power uprate.

   c. Provide similar information for the balance-of-plant piping systems evaluated as listed in Section 3.11.

4. Provide an evaluation of the potential of flow induced vibration for the main steam and feedwater piping systems and for heat exchangers of the condensate and feedwater systems for the proposed power uprate.

5. Discuss the methodology and assumptions used for evaluating balance of plant (BOP) piping, components, and pipe supports, nozzles, penetrations, guides, valves, pumps, heat exchangers and anchors in Section 3.11 of the referenced topical report. Were the analytical computer codes used in the evaluation different from those used in the original design-basis analysis? If so, identify the new codes and provide justification for using the new codes and state how the codes were qualified for such applications.

6. Provide an evaluation of piping systems submerged in the suppression pool, vent penetrations, pumps, and valves, that may be affected by the LOCA dynamic loads (pool swell, condensation oscillation, and chugging) and the projected increase in the pool temperature as a result of the proposed power uprate.

7. Do you project modifications to piping or equipment supports for the proposed power uprate? If so, provide examples of pipe supports requiring modification and discuss the nature of these modifications

8. As a result of plant operations at the proposed uprated power level, the decay heat load for any specific fuel discharge scenario will increase. Please provide the following information:

   a. Provide the heat loads and corresponding peak calculated spent fuel pool (SFP) temperatures during planned refueling outages[1] and unplanned full core off-load.

   b. Since the residual heat removal (RHR) system serves as a back-up system to the SFP cooling system, prior to a planned or unplanned full core offload event, how many trains of SFP cooling system and RHR system are required to be operable and available for SFP cooling?

   c. Discuss the provisions that have been established in the plant operating procedures to ensure that the RHR system will be aligned for SFP cooling.

9. As stated in the Updated Final Safety Analysis Report (UFSAR), the SFP cooling system is designed to maintain the SFP at or below 120 °F with a decay heat load of 14.5×10^6 Btu/hr from all the previously discharged spent fuel assemblies (SFAs) and a freshly discharged partial (1/3) core. In the power uprate submittal, the SFP temperature is allowed to rise to 140 °F during planned (normal) refueling outage. Also, as stated in the UFSAR, in an event of an unplanned (emergency) full core offload, the SFP temperature will be maintained below 150 °F. In the power uprate submittal, ComEd stated that the

---

[1] If full core off-load is the normal practice during planned refueling outages at LaSalle, a single failure of the SFP cooling system should be assumed in the SFP thermal analysis for the planned refueling outages. A single failure of the SFP cooling system need not be assumed for the unplanned full core off-load events.

SFP temperature is allowed to rise to below pool boiling. Discuss the effects of these elevated pool temperatures during planned and unplanned full core off-load events on SFP (i.e., structures, SFP linings, etc.) and the SFP cooling and cleaning systems.

10. Since the heat removal capability of the SFP cooling system is a function of the lake temperature and the decay heat load is a function of the SFAs "in-reactor" hold time prior to discharge SFAs from the reactor, ComEd stated in the UFSAR that:

    "Normal refueling outages are planned to control the start of core offloading and/or the time of year (i.e., expected lake water temperature) in which the outage will occur."

    Please provide the following information:

    a. The calculated SFP peak temperatures at various lake water temperatures (i.e., 40 °F, 60 °F, 80 °F, 90 °F, 95 °F, etc.) and their corresponding SFAs "in-reactor" hold time required; coincident[2] time after reactor shutdown; and coincident decay heat load. For the case with the highest decay heat load, also provide the "time-to-boil" and maximum boil off rate.

    b. Discuss the provisions established or to be established in plant operating procedures that require analyses to be performed to determine SFAs "in-reactor" hold time to ensure that the SFP operating temperature limit of 140 °F will not be exceeded.

11. With regard to the SFP cooling, is the Branch Technical Position ASB 9-2, "Residual Decay Energy for Light Water Reactors for Long-Term Cooling" used to perform the decay heat calculations? If not, identify and provide the basis for any deviations and exceptions to the guidance described in Section 9.1.3 of the Standard Review Plan (SRP, NUREG-0800) including the Branch Technical Position ASB 9-2. Also, discuss the assumptions used to calculate the decay heat.

12. In the unlikely event that there is a complete loss of SFP cooling capability, the SFP water temperature will rise and eventually will reach boiling temperature. Provide the time to boil (from the pool high temperature alarm caused by loss-of-pool cooling to boiling) and the boil-off rate (based on the highest heat load from the planned or unplanned full core off-load). Also, discuss sources and capacity of make-up water and the methods/systems (indicating system seismic design Category) used to provide the make-up water.

    The above information is necessary to allow the staff to determine whether the analyses are consistent with the guidance described in Standard Review Plan, Section 9.1.3, "Spent Fuel Pool Cooling and Cleanup System."

---

[2] The time after reactor shutdown at which the SFP water reaches its temperature limit of 140 °F.

13. In order to determine whether adequate controls exist to ensure the guidance of Standard Review Plan, Section, 9.1.3, are met, the staff needs to understand the provisions established or to be established in plant operating procedures to monitor and control the SFP water temperature during full-core offload events. Provide the following information:

    a. How often the local temperature indicators for SFP water temperature will be monitored.

    b. The setpoint of the high water temperature alarm for the SFP.

    c. Information supporting a determination that there is sufficient time for operators to intervene in order to ensure that the temperature limit of 150 °F will not be exceeded.

    d. The mitigative actions (i.e., prohibit fuel handing, aligning other systems to provide SFP cooling, etc.) to be taken in the event of a high SFP water temperature alarm.

14. The equipment qualification (EQ) of mechanical equipment with non-metallic components inside and outside containment has not been addressed. Please demonstrate that plant operations at the proposed uprated power level will have no impact on the EQ of mechanical equipment with non-metallic components inside and outside containment.

<u>REFERENCE</u>

Letter, Commonwealth Edison Company to U.S. NRC, "LaSalle County Station, Units 1 and 2 - Docket Nos. 50-373 and 50-374, Request for License Amendment for Power Uprate Operation," dated July 14, 1999 - Attachment E: General Electric Nuclear Energy, Licensing Topical Report NEDC-32701P, Revision 2, "Power Uprate Safety Analysis Report for LaSalle County Station, Units 1 and 2," dated July 1997 (Proprietary).