

UNITED STATES NUCLEAR REGULATORY COMMISSIONCOMMONWEALTH EDISON COMPANYDOCKET NO. 50-373ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to the license held by Commonwealth Edison Company (CECo, the licensee) for operation of the LaSalle County Station (LCS) Unit 1 located in LaSalle County, Illinois.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

In general, the proposed license amendment would revise Technical Specifications (TS) to incorporate new Cycle 3 reload fuel operating limits, and expand operating domains (including operation with equipment out of service). Proposed TS changes specifically related to the Cycle 3 reload fuel operating limits and analyses include: (a) revising the maximum allowable Linear Heat Generation Rate (LHGR) to be fuel type specific, and establishing a LHGR limit for the new GE8x8EB reload fuel, (b) adding Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) limit curves for the new reload fuel, (c) deletion of the MAPLHGR reduction factor in Single Loop Operation (SLO), and (d) revising the Minimum Critical Power Ratio (MCPR) limit and associated 20% insertion scram time value. Other TS changes in this amendment that resulted from analyses performed by GE for CECo to

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expand the unit operating region, and allow for operation with certain equipment out-of-service include the following: (e) change the analyzed operating region to include extended load line limit (ELLLA), increased core flow (ICF) and feedwater temperature reduction (FTR), (f) revision of the Safety/Relief Valve TS to require the safety function of only 17 of the 18 Safety/Relief valves to be operable, (g) revision to the End-of-Cycle Recirculation Pump Trip System TS to allow the system to be inoperable provided the MCPR limit is increased, and (h) revision to the Main Turbine Bypass System TS to allow one bypass valve to be inoperable provided the MCPR limit is increased.

Concurrent with the aforementioned TS changes, several administrative and editorial revisions were proposed for continuity. Furthermore, applicable TS bases and references were updated to reflect new information, fuel type, control rod type analyses, computer models, operating domains, and Limiting Conditions of Operation (LCOs).

These revisions to the license of LCS, Unit 1, would be made in response to the licensee's application for amendment dated January 19, 1988.

The Need for the Proposed Action:

Pursuant to 10 CFR 50.90, CECO has proposed an amendment of Facility Operating License NPF-11, which would revise certain license conditions and TS in order to provide for Cycle 3 operation of LCS Unit 1.

The Unit 1 Reload/2 Cycle 3 replacement reactor fuel is of the GE8x8EB extended burnup fuel design, which has some different mechanical

and nuclear features than the Cycle 2 fuel. Although this fuel type has not been employed at LCS before, Reload 2 is still considered a normal reload with no unusual core features or characteristics. The GE8x8EB fuel design described in Topical Report NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel (GESTAR II), has been reviewed and approved by the NRC for generic applications and extended burnup operations. Utilization of GE8x8EB fuel was recently approved for another CECo plant (Quad Cities) and for other non-CECo plants (e.g., Fitzpatrick, Peach Bottom, Limerick, and Millstone). This license amendment will establish the necessary critical operating limits, defined operating domains, and surveillance requirements to assure safe operation of LCS Unit 1 with the new Cycle 3 reactor core fuel configuration.

Environmental Impacts of the Proposed Action:

By letter dated January 19, 1988, the licensee provided transient and accident safety analyses using approved methods to bound all normal and abnormal conditions of Cycle 3 operation for Unit 1.

The licensee's reload submittal analysis was performed by GE using a new and advanced GEMINI licensing methodology to technically justify Cycle 3 operation. This methodology has been previously reviewed and considered acceptable by the NRC staff. Also, included as part of this reload submittal were transient and accident analyses for the following Equipment Out-of-Service and Extended Operating Domain operating modes (EOOS/EOD): ELLLA, ICF, FW heater(s) out-of-service, FTR, End-of-Cycle Recirculation Pump Trip System Out-of-Service (RPTOOS), Main Turbine Bypass System Out-of-Service (MTBOOS), relief valve out-of-service

(RVOOS), and SLO. Operation with a safety/relief valve out-of-service over the extended operating domain was demonstrated by performing core wide transients and Emergency Core Cooling System (ECCS) analyses with the most restrictive safety/relief valve out-of-service. This reload package, therefore, incorporates changes to allow operation with safety/relief valve out-of-service.

GE has reanalyzed the design basis Loss of Coolant Accident (LOCA) event at LCS with an improved ECCS computer code package called SAFER/GESTR-LOCA Application Methodology. Results from this analysis of postulated plant LOCAs were provided by CECO in accordance with NRC requirement which demonstrated that LCS conforms with the ECCS and Peak Cladding Temperature (PCT) acceptance criteria of 10 CFR 50.46 and Appendix K. Consequently, SAFER/GESTR-LOCA Loss of Coolant Analysis (NEDC-31510P dated December 1987) is now considered the primary ECCS licensing basis reference for LCS.

The Commission has reviewed these analyses and finds that potential radiological releases during normal operations, transients, and for accidents would not be increased. With regard to non-radiological impacts, the proposed amendment involves systems located entirely within the restricted area as defined in 10 CFR Part 20. They do not affect non-radiological plant effluents and have no other environmental impact. Therefore, the Commission also concludes that there are no significant non-radiological environmental impacts associated with the proposed amendments.

Accordingly, the Commission findings in the "Final Environmental Statement related to Operation of LaSalle County Station Units 1 and 2" dated November 1978 (NUREG-0486) regarding radiological environmental impacts from the plant during normal operation or after accident conditions, are not adversely altered by this action. Furthermore, occupational radiological exposure as a result of reload activities and subsequent plant operations allowed by this action will not differ when compared to previous operating and reload cycles. CECO is committed to operate LCS in accordance with standards and regulations to maintain occupational exposure levels "as low as reasonably achievable."

Alternative to the Proposed Actions:

The principal alternative would be to deny the requested amendment. This alternative, in effect, would be the same as a "no action" alternative. Since the Commission has concluded that no adverse environmental effects are associated with this proposed action, any alternatives with equal or greater environmental impact need not be evaluated.

Alternative Use of Resources:

This action does not involve the use of resources not previously considered in connection with the Nuclear Regulatory Commission's Final Environmental Statement dated November 1978 related to this facility.

Agencies and Persons Consulted:

The NRC staff reviewed the licensee's request of January 19, 1988 and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT:

The Commission has determined not to prepare an environmental impact statement for the proposed license amendment.

Based upon this environmental assessment, the Commission concludes that the proposed action will not have a significant adverse effect on the quality of the human environment.

For further details with respect to this action, see the request for amendments dated January 19, 1988 and the Final Environmental Statement for LCS dated November 1978, which are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. 20555 and at the Public Library of Illinois Valley Community College, Rural Route No. 1, Ogelsby, Illinois 61348.

Dated at Rockville, Maryland this 7th day of March 1988.

FOR THE NUCLEAR REGULATORY COMMISSION

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Daniel R. Muller, Director  
Project Directorate III-2  
Division of Reactor Projects - III  
IV, V and Special Projects

\* See previous concurrence

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Dated at Rockville, Maryland this            day of

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March 7, 1988

DOCKET NO. 50-373

MEMORANDUM FOR:

Rules and Procedures Branch  
Division of Rules and Records  
Office of Administration

FROM:

Office of Nuclear Reactor Regulation

SUBJECT:

COMMONWEALTH EDISON COMPANY - LASALLE UNIT 1  
ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

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- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for Submission of Views on Antitrust Matters.
- Notice of Consideration of Issuance of Amendment to Facility Operating License.
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
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Office of Nuclear Reactor Regulation

Project Directorate III-2  
Division of Reactor Projects - III,  
IV, V and Special Projects

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