

Docket File



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

December 7, 1993

Docket Nos. 50-373
and 50-374

Mr. D. L. Farrar
Manager, Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III, Suite 500
1400 OPUS Place
Downers Grove, Illinois 60515

Dear Mr. Farrar:

SUBJECT: LASALLE COUNTY STATION, UNITS 1 AND 2 - REVIEW OF UNREVIEWED SAFETY QUESTION CONCERNING THE ABILITY OF THE MECHANICAL VACUUM PUMP TO TRIP AND ISOLATE UPON RECEIVING A MAIN STEAM LINE HIGH RADIATION SIGNAL (TAC NOS. M87720 AND M87721)

By letters dated September 10 and November 17, 1993, Commonwealth Edison Company (CECo) submitted a request in accordance with 10 CFR 50.90 for the approval of a condition which involves an unreviewed safety question per 10 CFR 50.59(a)(2) at the LaSalle County Station, Units 1 and 2. The unreviewed safety question concerns the automatic shutdown of the main condenser mechanical vacuum pump and closure of the isolation valve downstream of the pump on a main steam line high radiation signal during a postulated control rod drop accident. Contrary to wording in the LaSalle County Station Updated Final Safety Analysis Report (UFSAR) and the NRC's Safety Evaluation Report (SER) related to the operation of LaSalle County Station (NUREG-0519), detection of a high radiation signal in the main steam lines does not automatically shut down the mechanical vacuum pump or close the isolation valve downstream of the pump. This automatic function was never installed at LaSalle. As a result, the above-mentioned portion of the licensing basis for LaSalle County Station as defined in the UFSAR and the NRC's SER is incorrect.

The bases for the main steam line high radiation scram and main steam line isolation are to limit the release of fission products from the reactor during the design basis control rod drop accident. Your analysis performed by General Electric Company (GE) for the LaSalle County Station showed that continuous operation of the mechanical vacuum pump during the postulated design basis control rod drop accident would result in exceeding the dose limit of Standard Review Plan (SRP), Section 15.4.9, but would remain below the 10 CFR Part 100 exposure guideline values. LaSalle was licensed using the dose limits in SRP Section 15.4.9. The same GE analysis showed that by tripping the mechanical vacuum pump in less than or equal to 15 minutes after the release to the main condenser will assure that the dose limit of SRP Section 15.4.9 is not exceeded. You proposed the use of station procedures to ensure operators trip the mechanical vacuum pump in the event a main steam line high radiation signal is received.

090011

NRC FILE CENTER COPY

9312150046 931207
PDR ADDOCK 05000373
P PDR

DFOI 1/0

To minimize further release of radionuclides following the postulated control rod drop accident, station procedures require the upstream valves that provide condenser suction for both the off-gas system and the mechanical vacuum pump to be subsequently closed by operators.

The staff has reviewed your submittal and finds the requirement for immediate operator actions to trip the mechanical vacuum pump within 15 minutes of a main steam line high radiation signal adequate based on the following:

1. LaSalle County Station procedures LOA 1(2)H13-P603-B305, "Channel A1/B1 Main Steam Line High Radiation"; and LOA 1(2)H13-P603-B309, "Channel A2/B2 Main Steam Line High Radiation"; have been revised to require remote manual trip of the mechanical vacuum pump as an immediate operator action. Information concerning the need to complete this action within 15 minutes to remain within the analysis limits for the off-site dose is provided in the procedures. The "Fuel Element Failure" abnormal procedure, LOA-NB-08, also includes subsequent operator actions requiring the closure of the upstream valves. In addition, LaSalle County Station performed a human factors assessment and determined that the required operator action to trip the mechanical vacuum pump within 15 minutes of a control rod drop accident could be performed in conjunction with all other required actions with the normal complement of operators present during reactor startup. The operators have been trained on the revised procedures, and simulator training is complete.
2. The staff has reviewed the analysis performed by GE in which the pump trip is assumed to occur 15 minutes after the initiation of the event. The staff has determined that the calculated thyroid and whole body doses with mechanical vacuum pump operation terminated at 15 minutes following the control rod drop accident are within the NRC acceptance criteria of 75 rem thyroid and are slightly greater than the acceptance criteria of 6 rem whole body as stated in SRP Section 15.4.9. This is based on the conservative assumption that all of the fission product gases and iodines are transported to the condenser instantaneously, which would cause a main steam line high radiation trip and alarm at the same time. Operator action is not required during the first 15 minutes of the event because the activity released will remain less than the SRP limit of 25% of 10 CFR Part 100 for the thyroid dose and approximately 26% of the limit for the whole body dose.

It should be noted that the use of operator actions in lieu of an automatic function to trip the mechanical vacuum pump appear to be acceptable because you have confirmed that operators have sufficient information in the control room to recognize the postulated accident scenario for which a manual trip of the mechanical vacuum pump is necessary and adequate task loading procedures and training are in place to ensure that necessary actions will be performed within the allocated 15 minutes.

With respect to your request for license amendment in accordance with 10 CFR 50.90, the staff has issued a Notice of Consideration of Issuance of Amendment

Mr. D. L. Farrar
Commonwealth Edison Company

LaSalle County Station
Unit Nos. 1 and 2

cc:

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

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

Assistant Attorney General
100 West Randolph Street
Suite 12
Chicago, Illinois 60601

Michael I. Miller, Esquire
Sidley and Austin
One First National Plaza
Chicago, Illinois 60690

Resident Inspector/LaSalle, NPS
U. S. Nuclear Regulatory Commission
Rural Route No. 1
P. O. Box 224
Marseilles, Illinois 61341

LaSalle Station Manager
LaSalle County Station
Rural Route 1
P. O. Box 220
Marseilles, Illinois 61341

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

Attorney General
500 South 2nd Street
Springfield, Illinois 62701

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

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

Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road, Bldg. #4
Glen Ellyn, Illinois 60137

Robert Neuman
Office of Public Counsel
State of Illinois Center
100 W. Randolph
Suite 11-300
Chicago, Illinois 60601