



July 1, 1997

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: LaSalle County Nuclear Power Station, Units 1 and 2
Application for Amendment of Facility Operating
Licenses NPF-11 and NPF-18, Appendix A, Technical
Specifications, Improvements to Control Room Air
Intake Radiation Monitoring Logic.
NRC Docket Nos. 50-373 and 50-374

Reference: Licensee Event Report #96-021-01, Docket #050-373,
dated, February 14, 1997

Pursuant to Title 10, Code of Regulations, Part 50, Section 90
(10 CFR 50.90), Commonwealth Edison Company (ComEd) proposes to
revise Appendix A, Technical Specifications, of Facility Operating Licenses
NPF-11 and NPF-18, LaSalle County Nuclear Power Station (LaSalle),
Units 1 and 2, respectively. The proposed amendment includes changes to
the Technical Specifications (TS) to reflect improvements made to the
Control Room Ventilation Air Intake Radiation Monitoring System Logic to
reduce spurious actuation of the Emergency Filtration Mode of Operation
and unnecessary challenges to an Engineered Safety Feature (ESF). The
TS affected is TS Table 3.3.7.1-1, Radiation Monitoring Instrumentation.

This proposed amendment request is subdivided as follows:

1. Attachment A gives a description and safety analysis of the proposed changes in this amendment.
2. Attachment B includes the marked-up License/Technical Specifications pages for LaSalle Units 1 and 2 with the requested changes indicated.
3. Attachment C describes ComEd's evaluation performed in accordance with 10 CFR 50.92 (c), which confirms that no significant hazard consideration is involved.

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4. Attachment D provides an Environmental Assessment Applicability Review per 10 CFR 51.21.

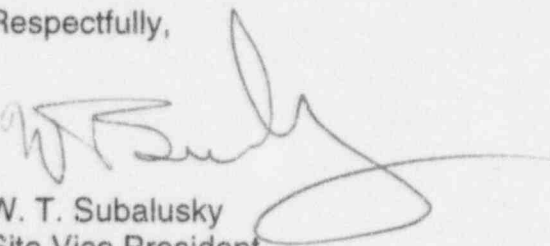
This proposed amendment has been reviewed and approved by ComEd Onsite and Offsite Review in accordance with procedures.

ComEd requests approval of this amendment request prior to startup from the current Unit 1 forced outage, L1F35. Unit 1 is scheduled to startup in December 1997. The amendment is requested to be in effect upon issuance, to be implemented within 60 days.

ComEd is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated state official.

If there are any further questions or comments concerning this submittal, please refer them to Perry Barnes, Regulatory Assurance Supervisor, at (815)357-6761, extension 2383.

Respectfully,



W. T. Subalusky
Site Vice President
LaSalle County Station

Enclosure

cc: A. B. Beach, NRC Region III Administrator
M. P. Huber, NRC Senior Resident Inspector - LaSalle
D. M. Skay, Project Manager - NRR - LaSalle
F. Niziolek, Office of Nuclear Facility Safety - IDNS

STATE OF ILLINOIS)

COUNTY OF LASALLE)

Docket Nos. 50-373
50-374

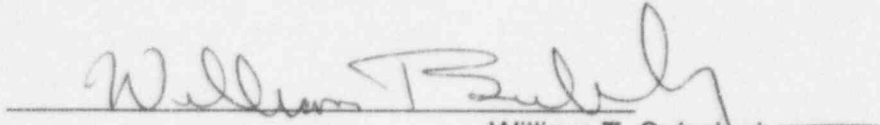
IN THE MATTER OF)

COMMONWEALTH EDISON COMPANY)

LASALLE COUNTY STATION - UNITS 1 & 2)

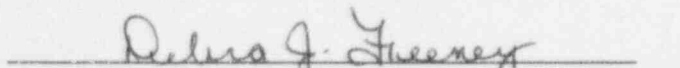
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I affirm that the content of this transmittal is true and correct to the
best of my knowledge, information and belief.

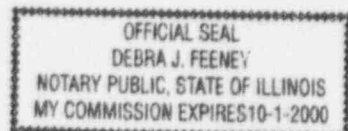


William T. Subalsky
Site Vice President
LaSalle County Station

Subscribed and sworn to before me, a Notary Public in and
for the State and County above named, this 15th day of
July, 1997. My Commission expires on
10-1, 2000.



Notary Public



ATTACHMENT A

LASALLE COUNTY STATION

**DESCRIPTION AND SAFETY ANALYSIS
FOR PROPOSED CHANGES TO**

**FACILITY OPERATING LICENSES
NPF-11 AND NPF-18**

APPENDIX A TECHNICAL SPECIFICATIONS

**MAIN CONTROL ROOM ATMOSPHERIC CONTROL SYSTEM RADIATION
MONITORING INSTRUMENTATION TECHNICAL SPECIFICATION**

ATTACHMENT A
DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

Description of Proposed Change:

A design change is to be installed, which changes the Main Control Room Atmospheric Control System Radiation Monitoring Instrumentation actuation logic to create two trip systems, each with two channels. The trip of both channels in either trip system initiates the protective feature. As with the original installed design at the time of licensing, a trip of either trip system still initiates the protective features. The revised design retains the separation and redundancy of the design basis and meets the single failure requirements as described in the Safety Evaluation Report. This revised design will result in a more reliable system with less susceptibility to unnecessary challenges to an Engineered Safety Features (ESF) system, which is the associated Control Room and Auxiliary Electric Equipment Room Emergency Filtration subsystem [referred to as the Control Room Emergency Filtration System in this Technical Specification (TS)].

The minimum channels required to be operable in TS Table 3.3.7.1-1 will be clarified to require two channels per trip system per intake instead of two channels per intake. In addition, the wording of TS Table 3.3.7.1-1 Action 70 is confusing and potentially misleading with respect to both the old and the new logic. The wording is also not consistent with other sections of the Technical Specifications.

It has been determined that there was a functional inconsistency in the original FSAR between the text description and the logic diagrams for the radiation monitoring system. The existing design matched the logic diagrams but the action statement in table 3.3.7.1-1 appears to be based on the FSAR text which described a one-out-of-two, taken twice logic scheme. The action statement refers to "required monitor" without defining them and requires the "downscale trip" of an inoperable channel. With the installed equipment, the downscale condition results in an alarm, but not a trip signal. Additionally, tripping a "channel", with the original installed design logic, would have resulted in an ESF actuation. Therefore, in practice, monitor and channel were considered to be equivalent and based upon the installed one-out-of-four, taken once logic, and the wording of the action statement, only two of the monitors were considered "required" to meet the minimum channels required to be operable. Also, when a channel was placed in the downscale condition, it was not actually tripped.

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The system actually consists of two independent "trip systems" per train. Each trip system includes two radiation monitor channels. For clarity and consistency, the radiation monitors for each ventilation train will be hereafter defined as channels A, B, C, and D, and the trip systems defined as Trip System 1 and Trip System 2. See Figure 1 for a schematic of the Current Configuration of Trip Systems and Figure 2 for the proposed Modified Configuration.

The amendment clearly defines the system logic and the specific actions required to operate the system.

Description of the current Operating License/Technical Specification Requirements:

Technical Specification Table 3.3.7.1-1, Radiation Monitoring Instrumentation, requires that a minimum of two channels per intake of the radiation monitoring system be operable. The radiation monitoring system in each intake consists of four monitors electrically isolated into two circuits with two monitors and one trip relay per circuit.

The minimum channel required to be operable for this instrumentation is modified by Note **, which is as follows:

- ** "A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition, provided at least one other operable channel in the same Trip System is monitoring that Trip Function."

The action to be taken for inoperable instrument channels is as follows:

Action 70 -

- a. "With one of the required monitors inoperable, place the inoperable channel in the downscale tripped condition within 1 hour; restore the inoperable channel to OPERABLE status within 7 days, or, within the next 6 hours, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation.

ATTACHMENT A
DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

- b. "With both of the required monitors inoperable, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation within 1 hour."

Bases for the current requirements

In the original design, an actuation of one monitor will result in the actuation of the associated trip relay. Actuation of a trip relay results in the ESF actuation. Therefore, in the original installed design, a channel could be considered to be one monitor and the associated trip relay. With two monitors per trip system, any two monitors would meet the number of channels required to be operable and the remaining channels could be out of service. Action statement 70 in this TS states that with a "required" monitor inoperable, the channel is to be placed in the "downscale tripped condition". With the installed equipment, if both monitors in a trip system were inoperable, both monitors would be placed downscale and the channels would be considered "downscale tripped".

The Bases for the current TS, Bases section 3/4.7.3.7.1 states that the operability of the radiation monitoring instrumentation ensures that; (1) the radiation levels are continuously measured in the areas served by the individual channels, and (2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded. UFSAR section 7.3.4.1 states that the Main Control Room and Auxiliary Electric Equipment Room (AEER) heating, ventilating, and Air/Conditioning Systems Instrumentation and Control are interlocked with the radiation monitoring system to isolate the control room and AEER and automatically route the outside makeup air for the HVAC system through one of the emergency filter trains to maintain control room and AEER habitability to meet General Design Criteria 19 of 10 CFR part 50, Appendix A.

Following modification of the Radiation Monitoring trip system, the logic scheme will consist of two monitors(channels) and one trip relay per trip system with two trip systems per radiation monitor subsystem. A trip of both channels in a trip system will be required to initiate the associated Control Room Emergency Filtration subsystem (CREFS) in the pressurization mode of operation. Either trip system will initiate the associated CREFS. The overall control logic for the remaining portions of the CREFS is not changed by the design change.

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

The difference in this design from isolation actuation is that the Radiation Monitoring System trip requires an active energization of the associated trip system. To ensure redundancy and satisfy the single failure requirements, the redundant active channels are electrically isolated by fuses. A single failure in one trip system could result in the loss of that trip system, however, the monitors in the redundant trip system are assumed to operate and would result in the desired ESF actuation. This configuration combined with the overall redundancy of two complete subsystems of the Control Room Ventilation and AEER Ventilation is conservative.

Description of the need for amending the Technical Specification

The habitability systems are designed to ensure habitability inside the control room and the Unit 1 and Unit 2 AEERs during all normal and abnormal station operating conditions including the post-LOCA requirements, in compliance with General Design Criterion 19 of 10 CFR 50 Appendix A. The habitability systems are designed with radiation monitors which continuously monitor the outside air intakes and automatically initiate protection functions for high radiation.

Each system is designed with redundant 100% capacity HVAC trains. In the event of high radiation detection from the outside air intake for the operating train, the radiation monitoring system automatically shuts off normal outside air supply to the system and the minimum outside air requirement is routed through the emergency makeup filter train and fan for removal of radioactive particulate and iodine, before being supplied to the control room or AEERs.

The radiation monitoring system for each train includes four monitors, A, B, C, and D, divided into two trip systems. This redundancy is to ensure that any single failure in the radiation monitoring system will not prevent the protective isolation of the outside air from occurring. The overall control scheme for the outside air isolation dampers is loss-of-power fail-safe. That is, upon a loss of power to the common power supply for the dampers and the radiation monitoring trip systems, the isolation dampers fail in the isolated position.

In the FSAR at the time of licensing of the facility, a functional discrepancy existed between the design basis as described in the text of the FSAR and the FSAR Logic Diagrams. The text described the actuation logic as being one-out-of-two taken twice. The Logic Diagrams showed a one-out-of-four taken once

ATTACHMENT A
DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

trip logic. This discrepancy was identified in Reference 1. The reason for this inconsistency has never been determined. The installed design matched the FSAR Logic Diagrams.

In the original installed design, an actuation of either one of the two Channels in a trip system was sufficient to cause the ESF actuation. A trip of either trip system initiated the protective feature. This design resulted in unnecessary actuations due to spurious operations of a single monitor. This resulted in unnecessary challenges to an Engineered Safety Feature (ESF).

A modification was made to the Radiation Monitoring System in 1993 which revised the circuitry to more closely match the FSAR text and reduce the number of spurious actuations. In this design, trip of two monitors were required for the ESF actuation. Although this design did reduce the number of challenges to the system, the design has subsequently been determined to violate the redundancy requirements of the design basis. This is also identified in Reference 1. The proposed design change will restore the redundancy.

As a result of the proposed design change, TS 3.3.7.1, Table 3.3.7.1-1 channels required to be operable and Action 70 for inoperable channels must be changed.

Description of the Amended Technical Specification Requirement

Technical Specification 3.3.7.1, Table 3.3.7.1-1 is proposed to be changed to reflect the improvements to the Main Control Room Atmospheric Control System Radiation Monitoring Subsystem to eliminate confusion in the definition of channels and trip systems. The number of Minimum Operable Channels per Trip system remains unchanged.

The proposed changes are:

Table 3.3.7.1-1; Minimum channels operable and the associated Action statement are as follows:

Minimum Channels operable: 2 per Trip System / Train (Intake)**

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Action 70 -

- a. "With the number of OPERABLE channels per trip system one less than the minimum required, place the inoperable channel in the tripped condition within one hour.
- b. "With both channels in a trip system inoperable, declare the trip system inoperable. Restore the inoperable trip system to OPERABLE status within 7 days, or, within the next 6 hours, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation.
- c. "Otherwise, initiate and maintain operation of the control room emergency filtration system in the pressurization mode of operation within 1 hour."

Note ** remains unchanged and is as follow:

** - "A channel may be placed in an inoperable status for up to 6 hours for required surveillance testing without placing the Trip System in the tripped condition, provided at least one other operable channel in the same Trip System is monitoring that trip function."

Also, a description of the trip systems and requirements for operability is being added to the Bases section 3/4.3.7.1, Radiation Monitoring Instrumentation.

Bases for the Amended Technical Specification Request:

The revised design maintains the fundamental trip logic of the original design, while reducing the probability of unnecessary ESF challenges caused by the spurious operation of a single radiation monitor. As indicated in section 9.4.1 of the Standard Review Plan and in Regulatory Guide 1.95, the control room emergency ventilation system should be capable of accommodating a single active failure in the control circuitry without resulting in a failed open system. The revised design, with two redundant independent trip systems per train maintains this requirement.

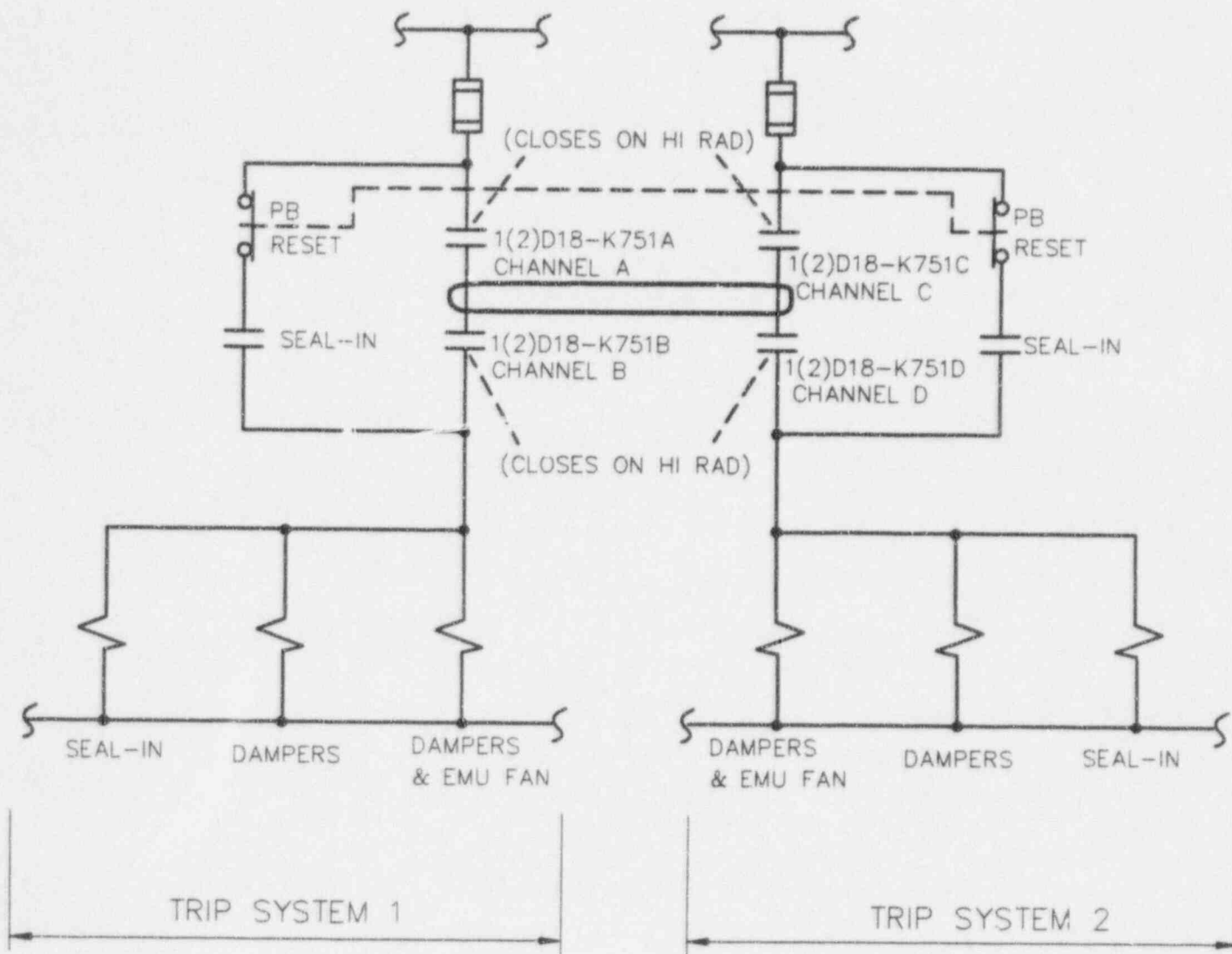
ATTACHMENT A
DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

The revision to the logic and changes to the actions of the Technical Specifications are similar to numerous other systems currently in place. The changes proposed to the actions are intended to clarify system logic wording. The actions assure that automatic trip capability is maintained and if not, then the Control Room Emergency Filtration System is placed in the pressurization mode as in the current TS. This is consistent with the current TS.

Multiple instruments combined in similar logic to initiate a trip system are utilized in the isolation actuation instrumentation. For isolation actuation instrumentation, a trip signal from two level instruments in division 1 or division 2 is required for a primary containment isolation by the respective divisions. This design is to ensure that a single spurious input will not result in an ESF actuation. This is the same rationale for the current proposed change to the Radiation Monitoring Trip system. The Limiting Condition For Operation for isolation actuation instrumentation, inoperability of a single channel in one or more trip systems does not result in an inoperable trip function provided the inoperable channel(s) are tripped to ensure that the remaining operable channel(s) are capable of satisfying the trip function. Also, the actions assure that automatic trip capability is maintained and if not, then the Control Room Emergency Filtration System is placed in the pressurization mode as in the current TS. A discussion of the channel logic is being added to TS Bases section 3/4.3.7.1 to aid in understanding the relationship of the instrumentation channels and the TS requirements.

Schedule:

ComEd requests approval of this amendment request prior to startup from the current Unit 1 forced outage, L1F35. Unit 1 is scheduled to startup in December 1997. The amendment is requested to be in effect upon issuance, to be implemented within 60 days.



UNIT 1(2) MCRACS RADIATION MONITOR TRIP LOGIC
MODIFIED CONFIGURATION

FIGURE 2

ATTACHMENT B

LASALLE COUNTY STATION

**MARKED UP ANNOTATED COPY OF AFFECTED PAGES
FOR PROPOSED CHANGES TO**

**FACILITY OPERATING LICENSES
NPF-11 AND NPF-18**

APPENDIX A TECHNICAL SPECIFICATIONS

**MAIN CONTROL ROOM ATMOSPHERIC CONTROL SYSTEM RADIATION
MONITORING INSTRUMENTATION TECHNICAL SPECIFICATION**

**ATTACHMENT B
PROPOSED CHANGES TO THE
LICENSE/TECHNICAL SPECIFICATIONS**

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NPF-18

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