

December 12, 1997

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

**Subject:** LaSalle County Station Units 1 and 2 Application for Amendment of Facility Operating Licenses NPF-11 and NPF-18, Appendix A, Technical Specifications, Change to the Bypass Logic for Main Steam Line Isolation Valve Isolation Actuation Instrumentation on Condenser Low Vacuum.  
NRC Docket Nos. 50-373 and 50-374

**Reference:** Letter dated November 24, 1997 from W.T. Subalusky to the U.S. NRC, Request for an amendment to the Technical Specifications concerning Leak and Break Detection Isolation Instrumentation.

Pursuant to 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 Station Units 1 and 2. The proposed changes include changes to the Technical Specifications (TS) to modify the bypass logic for Main Steam Line Isolation Valve Isolation Actuation Instrumentation on Condenser Low Vacuum as stated in Note \* of TS Tables 3.3.2-1 and 4.3.2.1-1. The TS affected is TS 3/4.3.2, Isolation Actuation Instrumentation. The proposed changes are supported by testing performed by General Electric.

The TS Table notes state that Condenser Vacuum - Low is bypassed when all turbine stop valves are closed, rather than when all turbine stop valves are not full open, which is more accurate. A change to these notes is proposed to correct this information.

This proposed amendment request is subdivided as follows:

1. Attachment A gives a description and safety analysis of the proposed changes in this amendment.

97121R0142 971212  
PDR ADOCK 05000373  
P PDR



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

This amendment request is affected by the request for amendment referenced above. The November 24, 1997 letter proposes to change leak and break detection isolations. The changes in the attached request for amendment effect Note \* on Unit 1 TS Table 4.3.2.1-1, page 3/4 3-22, which is proposed to be changed to delete Trip Functions 6.d and 6.e on the same page in the referenced submittal.

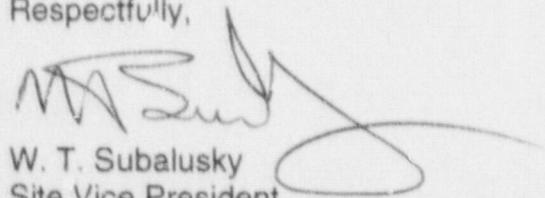
This proposed amendment has been reviewed and approved by ComEd On-Site and Off-Site Review in accordance with procedures.

ComEd requests approval of this license amendment request prior to the startup of LaSalle, Unit 1, from its current forced outage, L1F35. The amendment should be made effective upon issuance for Unit 1. ComEd will implement the amendment prior to startup of LaSalle, Unit 1, from the current outage.

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 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

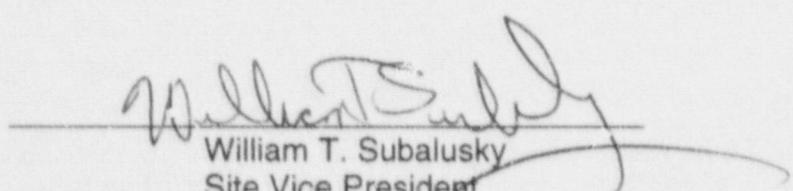
cc: A. B. Beach, NRC Region III Administrator  
M. P. Huber, NRC Senior Resident Inspector - LaSalle  
D. M. Skay, Project Manager - NRR - LaSalle  
F. Niziolek, Office of Nuclear Facility Safety - IDNS

STATE OF ILLINOIS )  
COUNTY OF LASALLE )  
IN THE MATTER OF )  
COMMONWEALTH EDISON COMPANY )  
LASALLE COUNTY STATION - UNITS 1 & 2 )

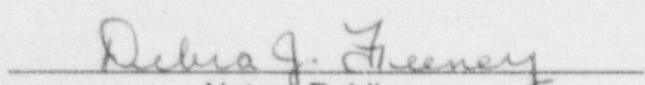
Docket Nos. 50-373  
50-374

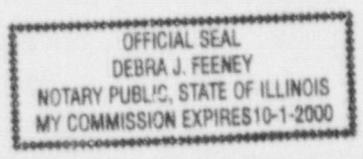
**AFFIDAVIT**

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

  
William T. Subalusky  
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 12<sup>th</sup> day of December, 1997. My Commission expires on October 1, 2000.

  
Notary Public



ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

Description of the Proposed Change

Commonwealth Edison Company (ComEd) proposes to revise Appendix A, Technical Specifications of Facility Operating Licenses NPF-11 and NPF-18, LaSalle County Station Units 1 and 2. The proposed changes include changes to the Technical Specifications (TS) to modify the bypass logic for Main Steam Line Isolation Valve Isolation Actuation Instrumentation on Condenser Low Vacuum as stated in Note \* of TS Tables 3.3.2-1 and 4.3.2.1-1. The TS affected is TS 3/4.3.2, Isolation Actuation Instrumentation. The proposed changes are supported by testing performed by General Electric in the 1970s.

The TS Table notes state that Condenser Vacuum - Low is bypassed when all turbine stop valves are closed, rather than when all turbine stop valves are not full open, which is more accurate. A change to these notes is proposed to correct this information.

Background

A reactor pressure interlock is designed into two bypass interlock functions. One function is to cause a reactor scram if vessel pressure exceeded the established limit with the reactor mode switch not in RUN position. The other bypass interlock function is part of the Group 1 primary containment isolation valves isolation bypass logic for the Condenser Vacuum - Low isolation actuation instrumentation. Group 1 isolation valves (MSLIVs) include the Main Steam Isolation Valves (MSIVs) and the Main Steam Line Inboard Drain Line and Outboard Drain Line Isolation Valves.

The original design for LaSalle specified a reactor scram if vessel pressure exceeded 600 psi with the reactor mode switch in startup and the Main Steam Isolation Valves (MSIVs) closed. This scram logic was the result of startup experience at KRB, a European BWR1 in the 1960s where difficulty was encountered in controlling reactor power above 600 psi without pressure control. This scram requirement was reflected in some BWR TS. Subsequently, a special stability test was performed at Browns Ferry Unit 1 in 1974, as part of the startup program. The intent of the test was to detect the existence of any marginally stable parameters in a more current model BWR at rated pressure with the MSIVs closed. The documented test results at Browns Ferry Unit 1 indicated that the sequential heating of the vessel, steam lines, and main turbine

ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

was within the plant's capability, i.e., the KRB condition was not experienced at Browns Ferry Unit 1. As a result, General Electric (GE) made the following change to the design of all BWR plants:

1. "Increase the pressure trip point to the high pressure scram setpoint or remove all circuits associated with the Hot Standby pressure trip."
2. "Change the Plant Protection Transient Data Sheets to reflect the above."

Prior to the issuance of Facility Operating Licenses NPF-17 and NPF-18 for LaSalle Units 1 and 2 respectively, LaSalle implemented the first option of Item 1 above and raised the pressure setpoint to 1043 psig (from 600 psig). The new setpoint is reflected in Note \* of TS Tables 3.3.2-1, Isolation Actuation Instrumentation, and 4.3.2.1-1, Isolation Actuation Instrumentation Surveillance Requirements.

Description of the Current Operating License/Technical Specification Requirement

The bypass interlock from reactor vessel pressure is listed in Note \* of TS Tables 3.3.2-1 and 4.3.2.1-1 as follows:

Table 3.3.2-1, Functional Unit A.1.f, Applicable Operational Conditions 2 and 3 are modified by Note \*:

" \* May be bypassed with reactor steam pressure  $\leq$  1043 psig and all turbine stop valves closed."

Table 4.3.2.1-1, Functional Unit A.1.e, Applicable Operational Conditions 2 and 3 are modified by Note \*:

" \* When reactor steam pressure  $>$  1043 psig and/or any turbine stop valve is open."

It is proposed to delete reference to reactor steam pressure from these TS table notes.

ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

In addition, the Condenser Vacuum - Low trip function is bypassed when all turbine stop valves are not full open, which is from the same valve position limit switch auxiliary relays used for the Turbine Stop Valve - Closure scram. The Condenser Vacuum - Low trip function has four channels, two per trip system and each channel has its own bypass logic channel. The position interlocks from the TSVs are as follows for the bypass channels for the Condenser Vacuum - Low trip function:

- Channel A can be bypassed if TSV 1 is not full open. If TSV 1 fully opens in Operational Conditions other than 1, Channel A is unbypassed.
- Channel B can be bypassed if TSV 3 is not full open. If TSV 3 fully opens in Operational Conditions other than 1, Channel B is unbypassed.
- Channel C can be bypassed if TSV 4 is not full open. If TSV 4 fully opens in Operational Conditions other than 1, Channel C is unbypassed.
- Channel D can be bypassed if TSV 2 is not full open. If TSV 2 fully opens in Operational Conditions other than 1, Channel D is unbypassed.

Therefore, a single channel can be bypassed when the associated TSV is not full open and is unbypassed when the associated TSV is fully open. All channels can be bypassed when all TSVs are not full open and conversely, all channels are unbypassed when all TSVs are fully open. Therefore, the note in Table 4.3.2.1-1 is not correct in stating "any Turbine Stop Valve".

The setpoint for the TSV position limit switches is controlled by TS 2.2.1, Table 2.2.1-1, Functional Unit 10, and surveillances, such as channel functional tests and channel calibrations are performed per TS 4.3.1 at the frequencies specified in TS Table 4.3.1.1-1.

Bases for the Current Requirement

The current requirement is based on incorporation of automatic bypass interlocks for primary containment isolation actuation logic into the TS associated with Operational Conditions 2 and 3 (Startup and Hot Shutdown). The reactor pressure interlock for the MSL Isolation Valve Condenser Vacuum - Low Trip Function is set high enough that it is effectively bypassed. The

ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

setpoint (also used as an allowable value, since none is specified) is the same as the Reactor Protection System (RPS) Instrumentation setpoint for a reactor Scram on Reactor Vessel Steam Dome Pressure - High.

Per UFSAR section 7.2.2.4.6, Main Steam Isolation Valve Closure:

"At plant shutdown and during initial plant startup, a bypass is required for the main steamline isolation valve closure scram trip in order to properly reset the reactor protection system (RPS). This bypass has been designed to be in effect when reactor pressure is less than reactor scram pressure level and the mode switch is in other than the RUN position."

Per UFSAR section 7.A.3.2.1, Primary Containment and Reactor Vessel Isolation Instrumentation and Controls; Conformance to IEEE 279-1971, Criteria for Protection Systems For Nuclear Power Generating Stations; Operating Bypasses (IEEE 279-1971 Paragraph 4.12):

"The low condenser vacuum bypass is imposed by means of a manual bypass switch in conjunction with closure of the turbine stop valves. Bypass removal is accomplished automatically by the bypass switch in normal position. Hence, the bypass is considered to be removed in accordance with IEEE 279-1971."

UFSAR section 15.2.5 discusses the Loss of Condenser Vacuum event. The bypass logic associated with the MSLIV isolation on Condenser Vacuum - Low is designed to not interfere with the sequence of events, which assume that the MSIVs close on low condenser vacuum. The turbine bypass valves also closed on condenser low vacuum from separate instrumentation and controls, which are part of the balance of plant turbine support systems. The closure of the turbine bypass valves is never bypassed, but is a non-safety system.

The UFSAR does not address the reactor pressure interlock of the condenser vacuum - low bypass logic. The interlock is present as part of the original design of the isolation circuitry and the reactor pressure and reactor mode switch interlocks are from the same instrument channels and relays as the MSIV closure scram bypass. Also, the LaSalle TS do not include reference to the reactor pressure interlock associated with the MSIV Closure scram.

ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

In addition, the Condenser Vacuum - Low can be bypassed when all turbine stop valves are not full open. The actual setpoints for the Turbine Stop Valve (TSV) position interlock are controlled by the Limiting Safety Systems Settings, Reactor Protection System Instrumentation Setpoints, of TS 2.2.1. Therefore, no setpoint is currently shown in notes \*. Also, the RPS setpoint is for causing a scram when TSVs begin to close (Not full open). The bypass interlock is used in the opposite manner for TSV essentially full open to automatically unbypass the associated channel logic for the Condenser Vacuum - Low isolation when in Operational Conditions 2 and 3 and is channel specific as discussed in the "Description of the Current Operating License/Technical Specification Requirement" above.

Description of the Need for Amending the Operating License/Technical Specification

Design changes, DCP 9700461 for Unit 1 and DCP 9700462, are being done to remove the existing MSIV closure scram bypass pressure switches, 1(2)B21-N020A, B, C, and D. These pressure switches provide interlocks in the bypass logic for the MSIV Closure scram and the Condenser Vacuum - Low Isolation Actuation logic for MSLIVs. These DCPs were initiated as a result of setpoint calculations that determined, based on calibration history, that the instrumentation does not stay within the TS value of  $\leq 1043$  psig regularly over the current 18 month calibration interval and because the reactor pressure interlocks are not needed for plant protection. The removal of these instruments and the associated bypass logic changes require a change to Note \* of TS Tables 3.3.2-1 and 4.3.2.1-1 to delete reference to reactor pressure as part of the bypass. The reactor scram on Reactor Steam Dome Pressure - High is not affected by this change.

The reference to TSV positions and interlock logic in the same notes are not correct and are thus proposed to be changed. The basis for the current positions and logic is not clear.

ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

Description of the Amended Operating License/Technical Specification Requirement

TS Table 3.3.2-1 Note \* is proposed to be changed to read as follows:

"" May be bypassed with all turbine stop valves not full open."

TS Table 4.3.2.1-1, Note \* is proposed to be changed to read as follows:

"" Not required when all turbine stop valves are not full open."

The TS Bases section 3/4.3.2 is proposed to be changed to more clearly describe the condenser vacuum - low trip function bypass logic and that TSV position setpoints are controlled by TS 2.2.1 with surveillances performed per TS 4.3.1.

Bases for the Amended Operating License/Technical Specification Request

The original design had the MSIV closure scram and the MSLIV isolation on condenser vacuum - low bypassed at less than 600 psig. This was changed prior to the issuance of the LaSalle Units 1 and 2 Facility Operating Licenses to occur at less than or equal to 1043 psig based on one of two options in a letter from GE dated April 26, 1974. This was documented to the NRC in Response to NRC Question 031.90 on the FSAR in FSAR amendment 28, dated December 1977.

The setpoint of less than or equal to 1043 psig was chosen to essentially remove the effect of the interlock from the bypass circuits without an actual logic change required. The second GE option was to remove all of the circuitry associated with reactor pressure in the MSIV closure scram bypass interlocks.

Since the same reactor pressure - high circuitry affects the interlocks for both the MSIV closure scram bypass and the condenser vacuum - low MSLIV isolation bypass, removal of these pressure switches and associated circuitry from the scram bypass circuitry also removes it from the isolation bypass circuitry.

**ATTACHMENT A**  
**DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES**

The remaining bypass interlock for the MSIV closure scram is the reactor mode switch position not in RUN mode. Since power is limited to less than about 12% (Control Rod withdrawal block on APRM High setpoint in Operational Conditions 2 and 5.) and the reactor vessel steam dome pressure - high scram setpoint is 1043 psig, any pressure transients as a result of MSIV closure are minor due to low steam flow. This is confirmed by the MSIV closure scram applicability, which is only in Operational Condition 1, RUN mode. Therefore, deleting this scram bypass interlock from reactor pressure has little or no affect on reactor startup, operation, shutdown, or analyzed transients and accidents. Also, due to the existing scram on reactor vessel steam dome pressure - high, no new accidents result.

All channels of condenser vacuum - low isolation function are currently bypassed if all of the following are true:

1. Reactor mode switch is not in the RUN position.
2. All TSVs are not full open (closed with low vacuum Turbine trip).
3. All four channels of Reactor vessel steam dome pressure switches (1(2)B21-N020s, not the scram function) are less than or equal to 1043 psig.
4. All four Condenser vacuum - low bypass keylock switches (one per channel) are in BYPASS.

With the reactor pressure interlock removed from the MSLIV condenser vacuum - low isolation bypass logic, the remaining interlocks assure that the condenser will not be overpressurized in Operational Conditions 2 and 3.

1. The Reactor mode switch interlock limits reactor thermal power to less than about 12% in Operational Condition 2 (Control Rod withdrawal block on APRM High setpoint in Operational Conditions 2 and 5) and to much less than 1 % power when all control rods are fully inserted in Operational Condition 3 after initial thermal power decay due to decay heat following reactor shutdown. This is confirmed by the MSIV closure scram applicability, which is only in Operational Condition 1, RUN mode.

ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

2. The Turbine bypass valves can not be opened with condenser vacuum low (approximately the same as the isolation setpoint, but different instrumentation).
3. The Turbine Stop Valves remain closed with condenser vacuum low due to a turbine trip at about 23" of vacuum.

Therefore, the remaining bypass interlocks, associated with TSV position for the bypass of the condenser vacuum - low MSLIV isolation, assure that the isolation of the main steam lines will occur when needed to prevent overpressurization of the main condenser when vacuum is low or gone. In addition to the automatic interlocks, administrative controls are used to assure that no direct steam path to the main condenser is available, except for MSL drains with low condenser vacuum when in Operational Conditions 2 or 3.

The change to the position information in the TS Table notes for the TSV bypass interlock corrects misinformation in the TS. The design has always used contacts from the auxiliary relays associated with the "not-full-open" limit switches for the MSIV closure scram. Therefore, the setpoints are the same as the MSIV closure scram in TS 2.2.1. The setpoint in the notes \* are made approximate to avoid conflict with the RPS setpoints, which are controlling. Also, this will allow surveillances for the RPS function for TSV closure scram to be performed per TS 4.3.1 at the frequencies specified in TS Table 4.3.1.1-1. Also, the TSV closure scram bypass below 30% power (TS Table 3.3.1-1, Note i) is in the reactor scram logic only and thus does not affect the TSV position interlocks for the condenser vacuum - low bypass logic.

The setpoint for the TSV interlock is not a critical parameter for the isolation bypass interlock, since the normal position of the TSVs with low condenser vacuum is fully closed. Therefore, the use of an approximate value is sufficient, since the actual setpoints and surveillances are controlled by other specifications.

The change to the wording of Note \* of TS Table 4.3.2.1-1 to be more like the wording in Note \* of TS Table 3.3.2-1 eliminates confusion concerning when the isolation function is required to be Operable and when associated surveillance requirements are required to be performed.

ATTACHMENT A  
DESCRIPTION OF SAFETY ANALYSIS OF THE PROPOSED CHANGES

The proposed changes to the TS and Bases section are consistent with the detail level of NUREG 1434, Rev.1, Standard Technical Specifications General Electric Plants, BWR/6, but are made specific to the LaSalle design.

Schedule

ComEd requests approval of this license amendment request prior to startup of LaSalle, Unit 1, from its current forced outage, L1F35. The amendment should be made effective upon issuance for Unit 1. ComEd will implement the amendment prior to startup of LaSalle, Unit 1, from the current outage.