

COMMONWEALTH EDISON COMPANY  
LASALLE COUNTY STATION UNITS 1 and 2  
TECHNICAL SPECIFICATION CHANGE REQUEST

ATTACHMENT 1

BACKGROUND

Reference (a) specifies the required setpoints for the Main Steam Tunnel Differential Temperature (MSL delta T) Group 1 Isolation. These setpoints are based on a 25 gpm leak in the main steam tunnel. Reference (d) specifies that this setpoint will be based on a 1% to 10% rated steam leak. Prior to operation, calculations were performed by Sargent and Lundy (S&L) to determine initial setpoints. These setpoints were based on design information rather than actual plant as-built conditions. During the initial startup test program all the isolations setpoints of this type were monitored to determine if setpoint changes were required. At the completion of this testing, certain setpoints were found to be non-conservative and were administratively controlled. These setpoints were corrected (Reference (b)). At that time it was noticed that MSL delta T setpoints were conservative and could be raised; however, because of changing plant ventilation conditions affecting the main steam tunnel due to Unit 2 startup, and design changes to improve temperature sensor location, no Technical Specification changes were requested at that time.

Discussion

The Sargent and Lundy calculation LI-01 was used as the theoretical basis for the Technical Specification setpoint of 24°F differential temperature which would detect a 25 gpm steam leak in the main steam tunnel. The value for the normal (no leakage) temperature rise was to be verified by actual operating experience collected by Reference (e).

The accumulated data was forwarded to Sargent and Lundy for analysis. The results of that analysis state that the trip setpoint for the differential temperature should be 36°F with an allowable of 42°F rather than the existing setpoint of 24°F and allowable of 30°F.

The theoretical calculation assumed a normal (no leakage) temperature rise between inlet air sensors and outlet air sensors of 6°F. With Unit 1 operating at full power, the normal (no leakage) differential temperature is as high as 22°F. To ensure that no leakage exists, visual inspections of the steam tunnel have been performed.

The difference between the original theoretical calculations and the actual observed values can be attributed to various factors including: (1) lower actual total air flow and different air flow distribution than used in the original calculations (2) lower inlet air temperatures to the steam tunnel than used in the original calculation and (3) higher, more realistic, heat transfer rates through the insulation than those used in the theoretical calculations.

#### Summary

At this time the actual differential temperature is very close to the Trip Setpoint of 24°F as specified in Table 3.3.2-2. This does not allow sufficient margin for minor plant ventilation changes, or differing weather conditions or instrument drift which may cause the no leakage actual MSL delta T to exceed the Trip Setpoint causing unnecessary and undesirable isolations. At this time single channel (half isolation) trips have occurred. The main steam line space differential temperature setpoints should be set far enough above the actual no leakage conditions which are present in the steam tunnel at rated power to avoid spurious isolations and unnecessary challenges to plant systems, yet low enough to provide early indications of a steam line break. This Technical Specification change request should be approved as soon as possible to prevent a full isolation from occurring with no leak present.

The cumulative effect of these differences between theoretical and actual values justifies the request that the main steam tunnel leak detection differential temperature setpoint should be raised to 36°F with an allowable of 42°F. This change also applies to FSAR Table 7.3-2. The FSAR will be updated as part of the next annual update.

ATTACHMENT 2

Proposed Change to Appendix A

Technical Specifications to

Operating Licensing NPF-11 and NPF-18

Revised Pages: NPF-11 page 3/4 3-15  
NPF-18 page 3/4 3-15

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
<b>A. AUTOMATIC INITIATION</b>		
<b>1. PRIMARY CONTAINMENT ISOLATION</b>		
a. Reactor Vessel Water Level		> 11.0 inches*
1) Low, Level 3	> 12.5 inches*	> -57 inches*
2) Low Low, Level 2	> -50 inches*	< 1.89 psig
b. Drywell Pressure - High	< 1.69 psig	
c. Main Steam Line		< 3.6 x full background
1) Radiation - High	< 3.0 x full power background	> 834 psig
2) Pressure - Low	> 854 psig	< 116 psid
3) Flow - High	< 111 psid	
d. Main Steam Line Tunnel Temperature - High	< 140°F**	< 146°F**
e. Main Steam Line Tunnel Δ Temperature - High	< <sup>36°F</sup> 24°F**	< <sup>42°F</sup> 38°F**
f. Condenser Vacuum - Low	> 7 inches Hg vacuum	> 5.5 inches Hg vacuum
<b>2. SECONDARY CONTAINMENT ISOLATION</b>		
a. Reactor Building Vent Exhaust Plenum Radiation - High	< 10 mr/hr**	< 15 mr/hr**
b. Drywell Pressure - High	< 1.69 psig	< 1.89 psig
c. Reactor Vessel Water Level - Low Low, Level 2	> -50 inches*	> -57 inches*
d. Fuel Pool Vent Exhaust Radiation - High	< 10 mr/hr**	< 15 mr/hr**
<b>3. REACTOR WATER CLEANUP SYSTEM ISOLATION</b>		
a. ΔFlow - High	< 70 gpm	< 87.5 gpm
b. Heat Exchanger Area Temperature - High	< 185°F**	< 191°F**
c. Heat Exchanger Area Ventilation ΔT - High	< 95°F**	< 101°F**
d. Pump Area Temperature - High	< 160°F**	< 166°F**
e. Pump Area Ventilation ΔT - High	< 70°F**	< 76°F**
f. SLCS Initiation	NA	NA
g. Reactor Vessel Water Level - Low Low, Level 2	> -5 inches*	> -57 inches*

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
<u>AUTOMATIC INITIATION</u>		
1. <u>PRIMARY CONTAINMENT ISOLATION</u>		
a. Reactor Vessel Water Level		
1) Low, Level 3	> 12.5 inches*	> 11.0 inches*
2) Low Low, Level 2	> -50 inches*	> -57 inches*
b. Drywell Pressure - High	< 1.69 psig	< 1.89 psig
c. Main Steam Line		
1) Radiation - High	< 3.0 x full power background	< 3.6 x full background
2) Pressure - Low	> 854 psig	> 834 psig
3) Flow - High	< 111 psid	< 116 psid
d. Main Steam Line Tunnel Temperature - High	< 140°F	< 146°F
e. Main Steam Line Tunnel $\Delta$ Temperature - High	< <sup>36</sup> 24°F	< <sup>42</sup> 30°F
f. Condenser Vacuum - Low	> 7 inches Hg vacuum	> 5.5 inches Hg vacuum
2. <u>SECONDARY CONTAINMENT ISOLATION</u>		
a. Reactor Building Vent Exhaust Plenum Radiation - High	< 10 mr/h	< 15 mr/h
b. Drywell Pressure - High	< 1.69 psig	< 1.89 psig
c. Reactor Vessel Water Level - Low Low, Level 2	> -50 inches*	> -57 inches*
d. Fuel Pool Vent Exhaust Radiation - High	< 10 mr/h	< 15 mr/h
3. <u>REACTOR WATER CLEANUP SYSTEM ISOLATION</u>		
a. $\Delta$ Flow - High	< 70 gpm	< 87.5 gpm
b. Heat Exchanger Area Temperature - High	< 181°F	< 187°F
c. Heat Exchanger Area Ventilation $\Delta$ T - High	< 85°	< 91°F
d. Pump Area Temperature - High	< 116°F	< 122°F
e. Pump Area Ventilation $\Delta$ T - High	< 13°F	< 19°F
f. SLCS Initiation	N.A.	N.A.
g. Reactor Vessel Water Level - Low Low, Level 2	> -50 inches*	> -57 inches*

### ATTACHMENT 3

#### SIGNIFICANT HAZARDS CONSIDERATION

Commonwealth Edison has evaluated the proposed Technical Specification Amendment and determined that it does not represent a significant hazards consideration. Based on the criteria for defining a significant hazards consideration established in 10CFR50.92, operation of LaSalle County Station Units 1 and 2 in accordance with the proposed amendment will not:

- 1) Involve a significant increase in the probability or consequences an accident previously evaluated because the differential temperature leak detection instrument setpoints which are revised will still provide isolation capability at or below their design point as specified in the FSAR. These instruments are not part of the plant accident analysis as described in the FSAR and are only one of several methods for automatic isolation of the main steam lines on loss of line integrity (such as MSL high flow, MSL area high ambient temperature, MSL low pressure).
- 2) Create the possibility of a new or different kind of accident from any previously evaluated because no equipment is removed or accident analysis changed. The original basis for the setpoint as specified in the FSAR is still maintained.
- 3) Involve a significant reduction in the margin of safety because the original basis for this instrumentation setpoint is not reduced or revised. The revised setpoints are based on actual plant data versus design data.

Based on the preceding discussion, it is concluded that the proposed system change clearly falls within all acceptable criteria with respect to the system or component, in that the consequences of previously evaluated accidents will not be increased and the margin of safety will not be decreased. Therefore, based on the guidance provided in the Federal Register and the criteria established in 10CFR50.92 (e), the proposed change does not constitute a significant hazards consideration.