Public Service
Electric and Gas
Company

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March 29, 1990
NLR-N90055
LCR 90-05

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

**INCREASE TO ALLOWABLE MSIV CLOSURE TIME**
**LICENSE AMENDMENT APPLICATION**
**FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75**
**SALEM GENERATING STATION UNITS 1 AND 2**
**DOCKET NOS. 50-272 AND 50-311**

This letter submits an application for amendment to Appendix A of Facility Operating Licenses DPR-70 and DPR-75 for the Salem Generating Station Units 1 and 2 and is being filed in accordance with the provisions of 10 CFR 50.90. Specifically, changes are being proposed: 1) to Surveillance Requirement 4.7.1.5 to increase the allowable Main Steam Line Isolation Valve (MSIV) closure time from 5 seconds to 8 seconds , 2) to Table 3.3-5, "Engineered Safety Features Response Times" to increase the related steam line isolation time requirements for various ESF signals , 3) to the Mode 2 and 3 Action Statement for LCO 3.7.1.5 to facilitate MSIV testing during Modes 2 and 3 , and 4) to Bases Section 3/4.7.1.5 to clarify and explain the changes to the action statement for LCO 3.7.1.5.

Attachment 1 includes a detailed description of the proposed changes along with the justification and our significant hazards consideration analysis. Attachment 2 contains information to support our no significant hazards conclusion. Finally, the marked up Technical Specification pages are contained in Attachment 3.

In accordance with 10 CFR 50.91(b)(1), a copy of this request has been sent to the State of New Jersey as indicated below. Upon NRC approval, please issue a License Amendment which will be effective upon issuance and shall be implemented within 60 days of issuance.



A001
1/1

Should you have any questions or comment on this transmittal, do not hesitate to contact us.

Sincerely,

Affidavit
Attachments (3)

C Mr. J. C. Stone
Licensing Project Manager

Mr. T. Johnson
Senior Resident Inspector

Mr. W. T. Russell, Administrator
Region I

Mr. Kent Tosch, Chief
New Jersey Department of Environmental Protection
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CN 415
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Ref: NLR-N90055
LCR 90-05

STATE OF NEW JERSEY )
) SS.
COUNTY OF SALEM )

S. LaBruna, being duly sworn according to law deposes and says:

I am Vice President - Nuclear Operations of Public Service Electric and Gas Company, and as such, I find the matters set forth on our letter dated March 29, 1990, concerning the Salem Generating Station, are true to the best of my knowledge, information and belief.

S. LaBruna

Subscribed and Sworn to before me
this 29th day of March, 1990

Laraine Y. Beard
Notary Public of New Jersey

LARAINE Y. BEARD
Notary Public of New Jersey
My Commission Expires May 1, 1991

My Commission expires on

## I. DESCRIPTION OF THE PROPOSED CHANGE

The proposed change revises Salem Units 1 and 2 Technical Specifications to increase the Main Steam Isolation Valve (MSIV) allowable closure time and to improve flexibility during MSIV testing in operational modes 2 and 3 (Startup and Hot Standby).

The following changes are proposed for Technical Specification Table 3.3-5, Engineered Safety Features Response Times Section 3/4.7.1.5, Main Steam Line Isolation Valves and its associated bases, for Salem Units 1 and 2:

1) In Table 3.3-5, revise the steam line isolation response time for the following ESF signals: steam flow in two steam lines - high coincident with steam line pressure - low; containment pressure - high-high; and steam flow in two steam lines - high coincident with Tavg - low-low.

2) For Specification 3.7.1.5, the ACTION statement for MODES 2 and 3 is being revised to allow cycling of an inoperable MSIV, and to allow more than one MSIV to be inoperable and closed.

3) Surveillance requirement 4.7.1.5 is being revised to increase the allowable closure time (i.e., valve stroke time) from 5 seconds to 8 seconds.

4) Revise Section B3/4.7.1.5 to clarify the provision allowing cycling an inoperable MSIV.

## II. REASON FOR THE PROPOSED CHANGE

1) The steam line isolation response times of Table 3.3-5 are being revised to reflect the proposed increase in allowable MSIV stroke time, discussed in item 3 below.

2) In the event that one or more MSIV's are inoperable, the proposed change to the action statement of specification 3.7.1.5 will allow corrective actions and testing to proceed without requiring entry into operational modes in which testing is not possible (i.e., Hot Shutdown or lower).

3) Recent surveillance testing at Salem Unit 2 resulted in three MSIV's being declared inoperable due to failure to close within 5 seconds. This event is documented in LER 50-311/89-016. An evaluation was subsequently performed to assess the effects of increased MSIV closure time. The results of this evaluation, described in Attachment 2,

support a total isolation response time (i.e., including signal processing) of 12 seconds. The proposed change to the MSIV stroke time will result in a less restrictive surveillance requirement and will remain consistent with the licensing basis safety analyses.

4) The Bases Section is being clarified to state the intent of the provision to allow cycling an inoperable MSIV. That is, inoperable MSIV's will not be left open to allow testing of other MSIV's, or for any other reasons other than cycling the valve itself. An inoperable valve will not be left open for a period of time greater than that which is required for performance of the surveillance test for that valve.

III. JUSTIFICATION FOR THE PROPOSED CHANGE

1) As defined in the Salem Technical Specifications, the ESF response times of Table 3.3-5 consist of the time interval from when the monitored parameter exceeds its setpoint until the ESF equipment is capable of performing its safety function (e.g., until the MSIV's are closed). A reevaluation of the limiting accident scenarios which rely upon MSIV closure supports a total ESF response time of 12 seconds, as discussed in Attachment 2. PSE&G is hereby proposing to allow a maximum response time of 10 seconds for the steam line isolation signals modelled in the safety analyses.

The steam line isolation response time is being revised for the following three ESF signals:

a. Steam flow in two steam lines - high coincident with steam line pressure - low. The response time is being changed from $\leq$ 8.0 sec. to $\leq$ 10.0 sec. The current 8.0 second limit allows for three seconds of signal processing time. Response time testing data indicates that two seconds will be sufficient. Surveillance testing following approval of this change request will assure a total ESF response time of $\leq$ 10.0 seconds for this signal.

b. Containment pressure - high-high. The response time is being changed from $\leq$ 7.0 seconds to $\leq$ 10.0 seconds. The original two second allowance for signal processing time is being retained.

c. Steam flow in two steam lines - high coincident with Tavg - low-low. Steam line isolation from this ESF signal is not modelled in the Salem safety analyses, but is assumed to be available as a backup signal. The response time is being changed from $\leq$ 10.75 seconds to $\leq$ 13.75 seconds. The 5.75 second response time is being retained.

2) Emergency closure of the MSIV's is accomplished by venting steam from the top of the valve's lower cylinder, which creates a high differential pressure across the lower piston and rapidly closes the valve. Because testing the emergency closure feature relies on main steam pressure, it is generally performed during operational modes 2 or 3 (Startup and Hot Standby). If an MSIV is declared inoperable, corrective maintenance and restoration to operability is constrained by the lack of Technical Specification provisions to allow cycling the valve during modes 2 and 3. The proposed change would allow for troubleshooting and restoration of an MSIV to operability, where practical, without requiring plant shutdown.

   If the first MSIV tested is inoperable and closed, and the second valve tested is also inoperable, Technical Specification 3.0.3 requires that action is taken, within one hour, to bring the unit into mode 4 (Hot Shutdown) or lower. The proposed change to allow more than one inoperable and closed MSIV in modes 2 and 3 would facilitate troubleshooting and operability testing. The proposed change would also provide the flexibility to investigate potential causes of inoperability and the effectiveness of corrective measures.

   The proposed change will require that inoperable MSIV(s) are placed in their safe position (i.e., closed), except during cycling to reestablish operability. Therefore, the proposed change would allow more effective testing and troubleshooting without compromising the safety function of the MSIV's.

3) The safety analyses that are potentially impacted by MSIV closure times were revisited. Based on engineering judgement, the accident scenarios that are expected to be the limiting cases with respect to the licensing basis were identified. These cases were reanalyzed using an ESF response time of 12 seconds for steam line isolation. The results of these analyses were compared to the limits of the licensing basis. This evaluation, which is described in Attachment 2 supports a total steam line isolation ESF response time of 12 seconds. In order to preserve safety margin in Salem's licensing basis, PSE&G is proposing an allowable ESF response time of 10 seconds for the signals modelled in the safety analyses. Eight seconds of this response time is being allocated to MSIV stroke time.

IV. DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

This proposed change to the Technical Specifications:

1) Does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change consists of essentially two parts:

a) An increase in the allowable main steam isolation valve (MSIV) mechanical stroke time, provided in Technical Specification 3/4.7.1.5, from five to eight seconds.

This increase affects the total steam line isolation ESF response time. Two ESF signals resulting in steam line isolation are modelled in Salem's licensing basis safety analyses: steam flow in two steam lines-high coincident with steam line pressure-low; and containment pressure-high high. Technical Specification Table 3.3-5 currently allows a total ESF response time (signal processing plus valve stroke time) of seven and eight seconds, respectively. This proposed change increases the ESF response time for both signals to ten seconds.

A third steam line isolation ESF signal, steam flow in two steam lines-high coincident with Tavg-low low, is not modelled in the safety analyses, but is provided as additional backup protection. The proposed increase in allowable MSIV stroke time increases this signal's response time from 10.75 seconds to 13.75 seconds. This increase however, does not affect the licensing basis safety analyses.

The Salem Generating Station safety analyses which rely upon MSIV closure have been evaluated to account for the increased steam line isolation response time. The events reevaluated are: steam line break core response; steam line break mass/energy releases for inside containment integrity analysis and Environmental Qualification of equipment inside containment; steam line break mass/energy releases for outside containment equipment Environmental Qualification; feedline break; steam generator tube rupture (SGTR); and loss-of-coolant accident (LOCA). The LOCA analyses do not mechanistically model closure of the MSIV's, but conservatively assume steam line isolation occurs instantaneously at reactor trip. The other safety analyses listed above assume an overall Engineered Safety Features (ESF) response time for steam line isolation from the time that the isolation setpoint is reached until valve closure. The limiting cases of the accident analyses were revised using an increased MSIV response time. The revised safety analyses demonstrate that a steam line isolation response

time of twelve seconds does not invalidate the existing licensing basis for Salem Generating Station. Therefore the proposed increase to a ten second response time does not result in an increase in consequences of an accident previously evaluated.

Technical Specification limits on MSIV closure time assure that the accident mitigating feature of the MSIV's remains within the limits defined by the plant safety analyses. Increases in closure time do not affect the probability of occurrence of any previously evaluated accidents.

b) Revision of the Technical Specification Action Statements addressing inoperability of MSIV's. The existing Action Statements allow only one MSIV to be inoperable and closed; entry to operational mode 4 (Hot Shutdown) or lower is required with more than one MSIV inoperable. In addition, the current action statements do not contain any provision for cycling an inoperable MSIV to allow for restoration the valves to operability. The requirement to enter mode 4 prior to retesting an inoperable MSIV does not offer any reduction in the probability or consequences of an accident. The proposed change does not change the way the surveillance test of the MSIV's will be performed.

The proposed change would allow: 1) more than one MSIV to be inoperable and closed during modes 2 or 3 (Startup or Hot Standby) and 2) inoperable MSIV's to be cycled during these modes. These provisions will allow for improved testing of MSIV emergency closure capability. Technical Specification 3.7.1.5 will require that inoperable MSIV(s) remain closed, except when they are being cycled to reestablish operability. Closed MSIV's are in their safe position (i.e. are performing their safety function).

The Bases for this Technical Specification is being revised to clarify the intent of allowing inoperable MSIV's to be cycled. An inoperable MSIV will not remain open any longer than the time required for performing the Surveillance test for that valve. An inoperable MSIV may be cycled more than once, during performance of surveillance testing, while in mode 2 or 3.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2) Does not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed changes do not introduce any new operational configurations to the Salem Generating Station. The increase in steam line isolation response time remains within the bounds of the existing safety analyses and does

not introduce any new accident scenarios. The proposed changes to increase flexibility during MSIV testing are justified on the basis that inoperable MSIV's will remain closed, except during cycling to restore operability. These provisions will allow testing and corrective maintenance to be performed without requiring a change in Operational Modes to exit the Action Statement; they do not introduce the potential for any new types of accidents.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3) The limits established by the current licensing basis for Salem Generating Station assure that an adequate margin of safety exists. Reevaluation of the applicable safety analyses supports a twelve second steam line isolation response time. The proposed change requests an increase to ten seconds for the ESF signals upon which the safety analyses rely. Therefore the proposed change remains bounded by the limits comprising the licensing basis of Salem Generating Station, and does not involve a significant reduction in a margin of safety.

V. CONCLUSION

As discussed above, PSE&G has determined that the proposed change to the technical specifications does not involve a Significant Hazards Consideration since the change (i) does not involve a significant increase in the probability or consequences of an accident previously evaluated, (ii) does not create the possibility of a new or different kind of accident from any previously evaluated, and (iii) does not involve a significant reduction in a margin of safety.

## Introduction

The primary purpose of the Main Steam Isolation Valves (MSIV's) is to prevent excessive blowdown of the the steam generators. The Salem Unit 1 and 2 Technical Specifications require that each MSIV be demonstrated operable by verifying full closure within five seconds on any closure actuation signal.

The Salem Unit 1 and 2 safety analyses which model the MSIV closure time and steam line isolation include the following events: steam line break core response, steam line break mass/energy releases for inside containment integrity analysis, steam line break mass/energy releases for outside containment equipment qualification analysis, feedline break, steam generator tube rupture (SGTR), and loss-of-coolant accident (LOCA). The LOCA analyses do not mechanistically model closure of the MSIV's, but conservatively assume steam line isolation occurs instantaneously at reactor trip. The other safety analyses listed above assume an overall Engineered Safety Features (ESF) response time for steam line isolation from the time that the isolation setpoint is reached until valve closure. Thus, the actual valve stroking time is not directly assumed, but is part of the overall ESF response time which includes signal processing delays. As ESF steam line isolation response time of 12 seconds was assumed for the High Steam Flow coincident with Low Steam Pressure and the Containment Pressure High-High ESF trips to support a 10 second valve closure time and a 2 second signal processing delay. The High Steam Flow coincident with Tavg Low-Low ESF trip was not directly modelled but is assumed available as backup protection.

## Steam Line Break Core Response

To support an increase in the MSIV stroke time from 5 to 8 seconds, the Steam Line Break events presented in the Salem FSAR were analyzed assuming a 12 second main steam line isolation response time upon reaching the Low Steam Line Pressure coincident with High Steam Flow ESF setpoint. This response time accounts for a 10 second valve stroke time and a 2 second signal processing delay. A DNB analysis was performed for the case which was clearly the most critical to DNB. The results of the analysis yielded a minimum DNBR of 2.48, which is greater than the 1.45 DNBR limit. Therefore, a change to the Salem Technical Specifications to require full closure of the MSIV within 10 seconds of receipt for closure signal (T.S. 3/4.7.1.5) and a steam line isolation ESF response time of 12 seconds (T.S. Table 3.3-5) following a Low Steam Line Pressure coincident with High Steam Flow can be supported by the steam line break core response analyses.

Steam Line Break M/E Released Inside Containment

Steam line break mass/energy release inside containment analyses are performed to ensure that the peak containment pressure does not exceed the design limit. The pressure and temperature profiles generated by the analyses are used to demonstrate that the results are acceptable with respect to Salem Generating Station's Environmental Qualification Program.

**Peak Containment Pressure**

The following is a list of the key input assumptions used in calculating the containment response following a Main Steam Line Break (MSLB):

1) Auxiliary Feedwater Runout Flow to a ruptured steam generator of 2040 gpm.

2) ESF Feedwater Control Valve closure time of 10 seconds.

3) Safety injection delay time of 22 seconds in the Mass and Energy (M&E) release analysis. In M&E analyses, offsite power is assumed available, which is more conservative due to the fact that the additional heat from the reactor coolant pumps is added to the total energy calculation. Therefore, a safety injection delay time which does not include diesel generator delay time is assumed.

4) Minimum Safeguards Safety Injection (i.e., one train), from only the high head charging safety injection pump, is assumed.

5) Constant Moderator Density Coefficient (MDC) of 0.43 delta k /g/cc was used in the analysis. Credit for the difference between the actual MDC and the safety analysis value for MDC was taken by increasing the Shutdown Margin (SDM) input by the percent delta k of margin available in the MDC. 2.38 % delta k SDM was assumed in the analysis (vs. the Technical Specification value of 1.6% delta k). This method of relaxing the conservatism of the moderator feedback assumed in the analysis was only used where necessary to meet the peak containment pressure criteria.

6) For the cases where failure of the auxiliary feedwater runout protection is assumed, 4 of 5 containment fan coolers and both trains of containment spray are assumed operable. A 20 second fan cooler actuation delay and a 44 second containment spray delay is assumed, which is consistent with the assumption that offsite power is available.

The most limiting cases for the containment pressure criterion are the split breaks analyzed at an initial power level of 30% which assume the failure of the auxiliary feedwater runout

protection equipment or the failure of a containment safeguards train. Because these cases are affected by the increase in the MSIV closure time, these cases were re-analyzed to determine if the containment pressure criteria would continue to be met. The case which assumed the failure of the auxiliary feedwater runout protection equipment resulted in a peak containment pressure of 46.9 psia with a 12 second ESF steam line isolation response time assumed upon reaching the Containment Hi-Hi ESF trip setpoint. The case which assumed the failure of a containment safeguards train resulted in a peak containment pressure of 46.6 psia with a Containment Hi-Hi ESF steam line isolation response time of 12 seconds. Because the peak containment pressure calculated for these transients is less than the 47.0 psia containment design pressure, the analysis results are acceptable.

The next most limiting cases for the containment pressure criterion are the split breaks analyzed at an initial power level of 70% which assume the failure of the auxiliary feedwater runout protection equipment or the failure of a containment safeguards train. These cases are also affected by the increase in the MSIV closure time and have been re-analyzed to determine if the containment pressure criteria would continue to be met with 12 second ESF steam line isolation response time assumed upon reaching the Containment Hi-Hi ESF trip setpoint. The case which assumed the failure of the auxiliary feedwater runout protection equipment resulted in a peak containment pressure of 45.7 psia. The case which assumed the failure of a containment safeguards train resulted in a peak containment pressure of 46.8 psia. The peak containment pressures calculated for these cases are also less than the 47.0 psia containment design pressure.

It should be noted that the peak containment pressure calculated for the 70% power case with failure of a containment safeguards train is higher than the peak pressure calculated for the previously limiting 30% power case. This is because assumption #5 above was used for the 30% power case in order to meet the peak containment pressure criteria. It is expected that the 70% power case would have remained less limiting if assumption #5 were used.

There are more cases that will be analyzed to determine the variation in containment response resulting from proposed increase in MSIV closure time. Some of these cases will rely upon the Steam Line Low Pressure coincident with high Steam Flow ESF trip for steam line isolation. For these cases, a 12 second ESF steam line isolation response time will be assumed. The most limiting cases in terms of peak containment pressure, however, have been examined and the acceptance criteria are met. The current limiting cases are expected to remain the most limiting, and therefore it is likely that a 12 second ESF steam line isolation time for the Containment Hi-Hi and the Steam Line Low Pressure coincident with high Steam Flow ESF Trips can be supported for the steam line break containment integrity analysis.

**Environmental Qualification Inside Containment**

As discussed above, the expected limiting MSLB cases in terms of peak containment pressure have been reanalyzed to support the proposed increase in MSIV closure time. As demonstrated by Figure 1, the resulting pressure curve exceeds the current envelope of the Salem Generating Station Environmental Qualification program (EQ program). The increased pressure has been evaluated against the applicable vendor qualification test reports. Review of the vendor data indicates that the lowest qualified pressure for the affected safety related equipment inside containment is 60 psig, which is above the new peak pressure of 46.9 psig.

With regard to containment temperature, a revised profile was developed based on the MSLB cases that have been reanalyzed. A comparison of the revised and current MSLB/LOCA profile is shown in Figure 2. All of the remaining unanalyzed MSLB licensing basis cases have been evaluated for the impact of increased MSIV closure time on the containment temperature profile. The results of this evaluation indicate that the containment temperature response for the entire spectrum of steam line break cases, using a 10 second MSIV stroke time, is expected to be bounded by the revised containment temperature envelope of Figure 2.

Figure 2 shows two time periods where the existing EQ progam temperature profile is exceeded. The first region is in the initial temperature rise. Because of the short time duration of the exceedance, only equipment surface temperature is affected, and not the temperature of the internal components. Therefore, this increase has a minimal effect on the EQ program.

The second region of exceedance is in the 240 to 1000 second time period (Figure 3 contains a detail of this region). Although the temperature profile has increased from 264 to 275 degrees F, a combination of test data and temperature lag analysis have demonstrated that the qualification of the affected equipment is being maintained in accordance with 10CFR50.49. The documentation comprising the EQ program will be updated pending NRC approval of this change request.

<u>Steam Line Break M/E Releases Outside Containment</u>

The current licensing basis mass/energy release data for use in outside containment equipment qualification for Salem Units 1 and 2 are provided in Reference 1. For all the cases considered, a steam line isolation signal was never actuated. Therefore, a delay in the MSIV closure time will not affect the results of the analyses presented in Reference 1.

Feedline Break

Following the rupture of a main feedline, the RCS fluid will initially undergo a cooldown due to the additional heat removal capability provided due to the expulsion of the broken loop steam generator inventory. However, the RCS temperature transient quickly turns around following the isolation of the intact generators. An increase in the MSIV closure time will delay SG isolation and result in additional primary heat removal. As a result, the RCS will be slightly more subcooled at the beginning of the heat up transient. Hence, the RCS will stabilize at a slightly lower temperature than in the licensing basis calculation. Therefore, the results of the licensing basis feedline break analysis are conservative with respect to an increase in the MSIV closure time.

Steam Generator Tube Rupture

The FSAR analysis for a steam generator tube rupture (SGTR) accident for Salem Units 1 and 2 was reviewed to determine the impact of an increase in the MSIV closure time from 5 to 10 seconds (Technical Specification 3/4.7.1.5). In the SGTR analysis, the primary-to-secondary break flow was assumed to be terminated at 30 minute after accident initiation, but the operator actions to terminate the break flow were not explicitly modelled in the analysis. The operator actions include isolation of the ruptured steam generator which requires the closure of the ruptured steam generator main steam isolation valve (MSIV).

Small and Large Break LOCA

The small break and large break loss-of-coolant accident (SBLOCA and LBLOCA respectively) analyses are not adversely affected by an increase in the MSIV closure time. The SBLOCA and LBLOCA analyses assume that steam generator isolation occurs immediately after the reactor trip low pressure setpoint is reached. By isolating the steam generators at the time of reactor trip, the stored energy in the secondary system is conservatively greater than what would exist if the analyses modelled steam generator isolation when the MSIV's closed. For the SBLOCA analysis, the higher energy in the secondary is conservative since the primary to secondary heat transfer rate is reduced. In the LBLOCA analysis, the earlier steam generator isolation time increases the secondary to primary heat transfer, which is conservative. Therefore, an increase in the MSIV closure time does not impact the results of the licensing basis SBLOCA and LBLOCA analyses.

LOCA Blowdown Forces, Hot Leg Switchover to Preclude Boron Precipitation, Post-LOCA Long Term Core Cooling Subcriticality

Reactor Vessel and loop LOCA blowdown forces, hot leg switchover to preclude boron precipitation, and post-LOCA long term core

cooling subcriticality are not adversely affected by a change in the MSIV closure time. Increasing the MSIV closure time does not adversely affect the normal plant operating parameters, the safeguards systems actuations or accident mitigation capabilities important during a LOCA, or the assumptions used in the LOCA related analyses. In addition, the proposed change does not create conditions more limiting than those assumed in the LOCA analyses.

REFERENCE

1. WCAP-11634, "Salem Nuclear Generating Station Outboard Penetration Access Area Equipment Thermal Response to Superheated Steam Releases," October 1987.

# SALEM NUCLEAR GENERATING STATION

## LOCA/MSLB PROFILE

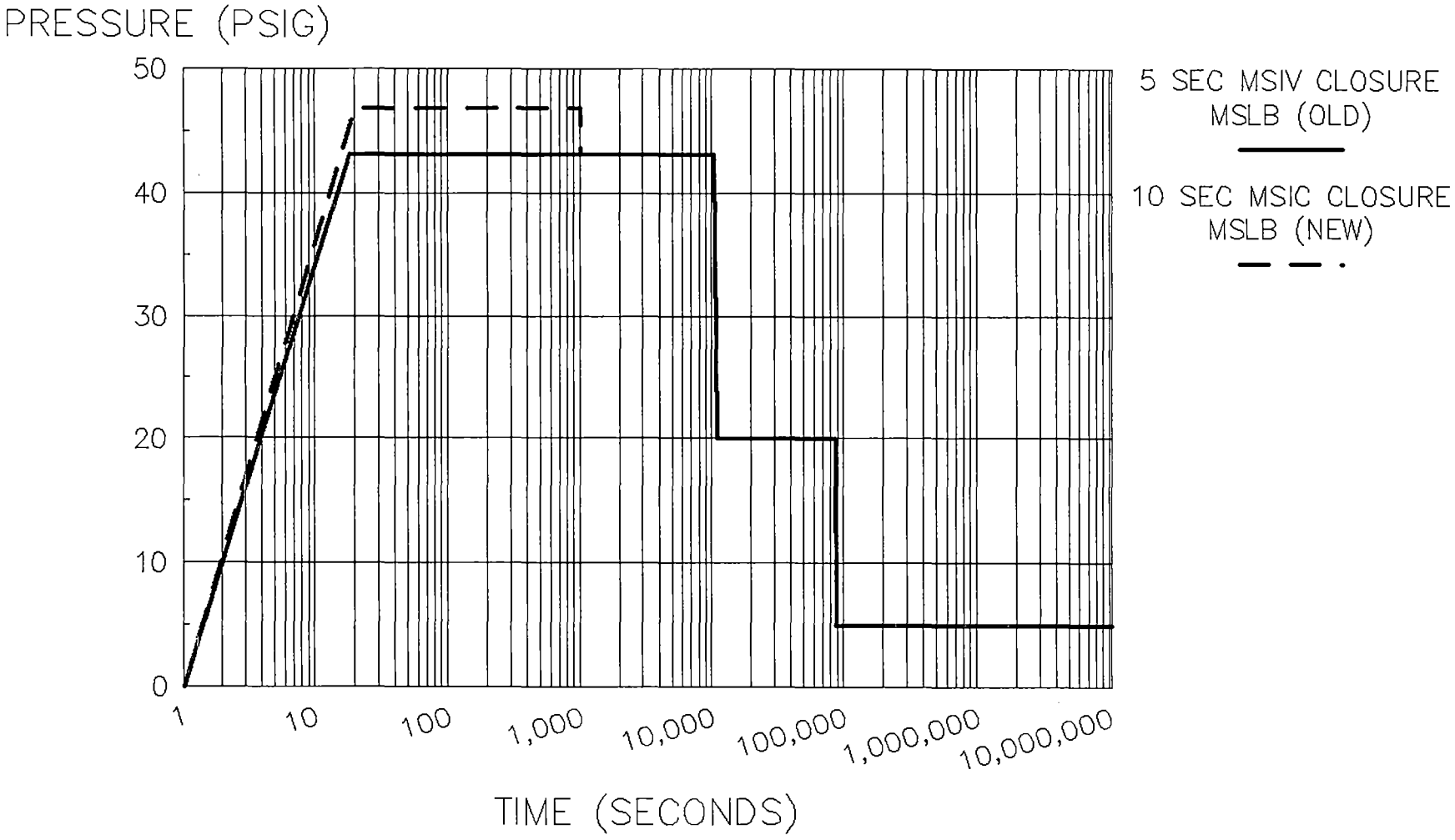


FIGURE 1

# SALEM NUCLEAR GENERATING STATION

## LOCA/MSLB PROFILE

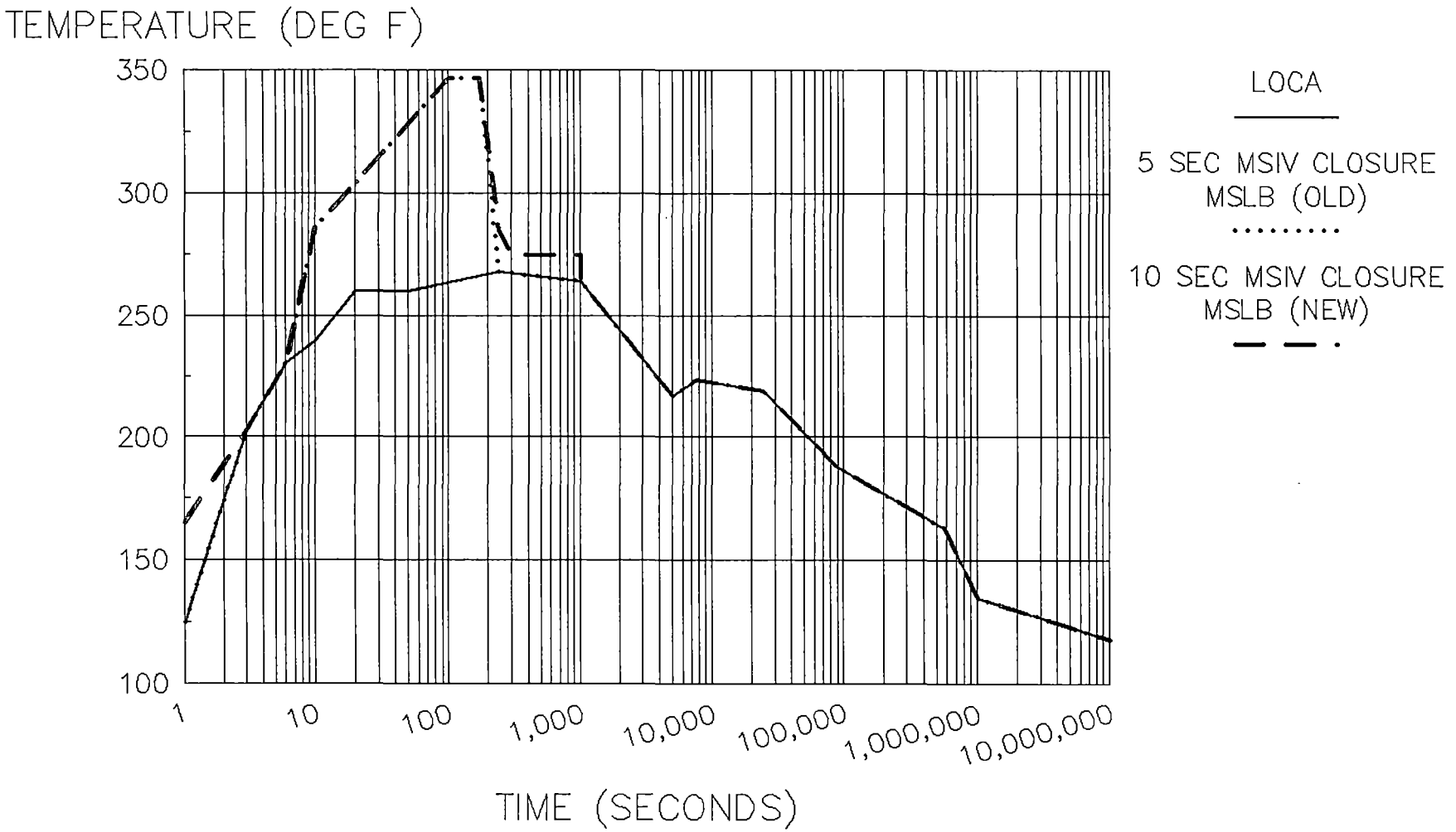


FIGURE 2

# SALEM NUCLEAR GENERATING STATION

## LOCA/MSLB PROFILE

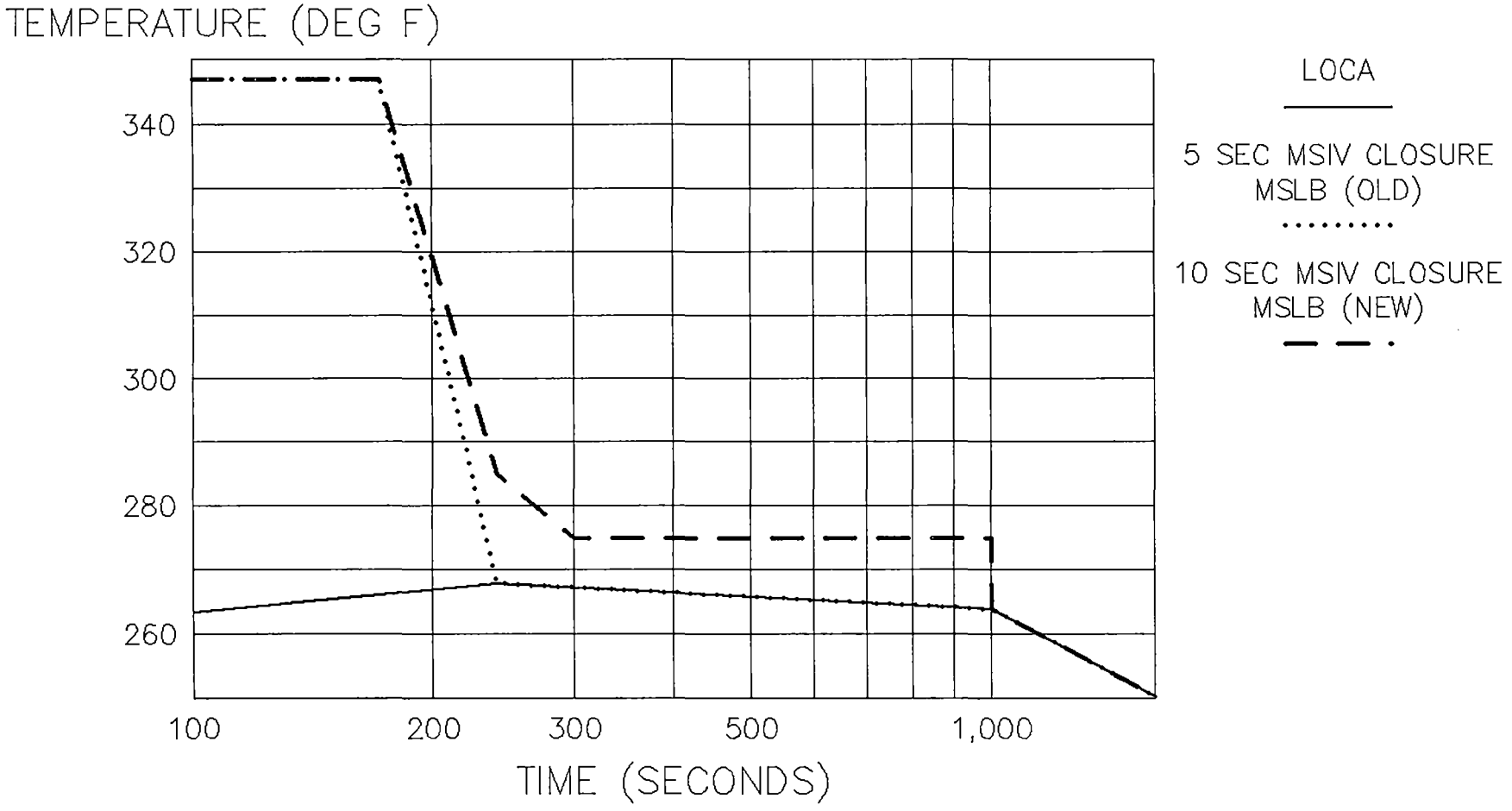


FIGURE 3

ATTACHMENT 3