



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

May 17, 1988

Docket

Docket No. 50-458

LICENSEE: Gulf States Utilities Company  
FROM: River Bend Station, Unit No. 1  
SUBJECT: SUMMARY OF APRIL 14, 1988 MEETING

On April 14, 1988, members of the NRC staff and representatives of Gulf States Utilities Company (GSU) and their contractors met in Rockville, Maryland. The purpose of the meeting was to discuss GSU's June 5, 1987 license amendment application for River Bend Station, Unit 1, that requests modification of the allowable average drywell area temperature, main steam tunnel area temperature monitoring, and main steam tunnel temperature isolation actuation instrumentation setpoints. Enclosure 1 is a list of meeting attendees. Enclosure 2 is a handout provided by GSU.

The licensee stated that it is their intention to withdraw that portion of Attachment 3 to the June 5, 1987 amendment request that deals with the temperature setpoints in the main steam tunnel (MST) south. The licensee indicated that the proposed technical specification values for the MST south did not consider use of the temporary unit coolers. GSU representatives stated that with this temporary unit cooler now being made permanent, there is no need to increase the setpoints.

The licensee summarized the ventilation in the MST north. Cooler trending shows a heat load of about 350,000 Btu/hr. in the MST north (analyses performed by the staff and confirmed by the licensee subsequent to this meeting show that this cooler heat load is about 600,000 Btu/hr). The licensee indicated that they had added insulation and revised the ducting to make the air flow better to reduce the maximum MST north in temperature. In addition, the unit cooler was cleaned during the last refueling outage. The licensee based the proposed setpoint on a 154°F calculated temperature assuming a 25 gpm leak in one hour, 148.5°F allowable temperature which includes an error allowance, and a setpoint of 141°F which includes an allowance for setpoint drift.

The licensee also discussed the meeting agenda questions forwarded by the NRC's letter dated March 24, 1988. The highlights of this discussion are summarized below:

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P PDR

- The model used for transient analysis of the MST was implemented in the Stone & Webster Engineering Corporation proprietary computer program, THREED, described in Appendix 6B of the Updated Safety Analysis Report.
- The design conditions for setting the leak detection process safety limit are based upon actual plant conditions for summer, with an assumed 25 gpm steam leakage over a one hour period.
- The circulation rate of unit cooler HVR\*UC8 is 18,000 cfm. The cooling capacity of this cooler is controlled by the temperature of the service water; the service water flow to the cooler is not regulated.
- The HVR\*UC8 cooler design includes a condensate drain which collects condensed moisture from the MST north in one of the common auxiliary building sumps.
- The volume of the MST north is about 26, 775 cubic feet as used in the subcompartment analysis.
- The circulation rate of unit cooler HVT\*UC11 is approximately 24,000 cfm for one fan operation and 34,000 cfm for two fan operation. The cooling capacity for this cooler is approximately 1,425,500 Btu/hr. The cooling medium is chilled water. The cooling capacity is controlled by regulating chilled water to the cooler.
- The recirculation cooler MR 86-000 3 consists of three closed loop freon cycle units with a total heat removal capacity of 50 tons.
- Monitoring of any radiation leakage into the MST is provided by the turbine building radiation monitor (RMS-RE118). Turbine building exhaust ventilation is directed to the main plant exhaust duct which is monitored by RMS-RE125 and RE126.
- The equipment located in the MST was environmentally qualified in accordance with NUREG-0588, Category 1 requirements.
- During refueling outage 1, 86 weld examinations were performed in the MST of the total of 287 exams planned during the first ten year inspection interval. One indication was found in the ICS system. A base metal repair was performed and additional weld sampling was selected and examined. No additional indications were found in the added weld sample. The indication is believed to be a talent construction scratch or gouge.

At the conclusion of the meeting, the staff indicated that a request for additional information would be prepared if there was a need for any further clarification of the information discussed during the meeting or if additional information needs are identified based on this meeting.

*Walter A. Paulson*

Walter A. Paulson, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects

Enclosures:  
As stated

cc w/enclosures:  
See next page

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/s/


Walter A. Paulson, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects

Enclosures:  
As stated

cc w/enclosures:  
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ACRS (10)  
PD4 Plant File

  
PD4/PMY  
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05/17/88

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River Bend Nuclear Plant

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Enclosure 1

Attendance List

April 14, 1988 Meeting

Gulf States Utilities/NRC

NAME

ORGANIZATION

W. Paulson	NRC/NRR
John Craig	NPP/SPLB
E. Earl Nichols, Jr.	GE Licensing
Ed Goodwin	Stone & Webster Eng.
Vincent P. Bacanskas	GSU DE/EQ
Barry M. Burmeister	GSU Licensing
Donald R. Hoffman	GSU Licensing
Joseph Schippert	GSU Operations
Erwin J. Zoch	GSU Engineering
John R. Hamilton	GSU Engineering
Rick King	GSU Licensing
Jack Kudrick	NRC/NRR/SPLB
Robert Licciardo	NRR/DEST/SPLB
Kris Parczewski	NRR/DEST/ECEB
Frank C. Skopec	NRR/DREB/PRPB
Hulbert C. Li	NRR/DEST/SICB
Don Katze	NRR/DEST/RSB
Arnold Lee	NRR/DEST/EMEB
Mark Hartzman	NRR/DEST/EMEB
Harold Walker	NRR/DEST/SPLB

GSU/NRC APRIL 14, 1988 MEETING  
AGENDA

INTRODUCTION

R. King

PRESENTATION ON - PHYSICAL DESCRIPTION/LAYOUT  
of the MAIN STEAM TUNNEL

J. Hamilton

- REASON AND DESCRIPTION of the  
PROPOSED CHANGES

- DESCRIPTION of MODEL

- CONCLUSIONS

PRESENTATION ON THE RBS DESIGN BASIS OF 25 gpm

E. Nichols

DISCUSSIONS OF NRC QUESTIONS IN  
ENCLOSURE 1 TO MARCH 24, 1988 LETTER

Open

## PURPOSE

- TO PRESENT AND DISCUSS GSU'S JUNE 5  
1987 PROPOSED TECHNICAL SPECIFICATION  
REQUEST ON MAIN STEAM TUNNEL TEMPERATURE  
ISOLATION ACTUATION INSTRUMENTATION  
SETPOINTS.
  
- ADDRESS NRC STAFF QUESTIONS AND AGENDA  
ISSUES IDENTIFIED IN A LETTER DATED  
MARCH 24, 1988.
  
- OBTAIN A GENERAL AGREEMENT BETWEEN  
GSU AND THE NRC STAFF ON THE PROPOSED  
CHANGE.



MAIN STEAM TUNNEL  
ISOLATION SETPOINTS

- I. REASON FOR REQUEST
- II. SYSTEM DESCRIPTION
- III. DESCRIPTION OF MODEL
- IV. CONCLUSIONS

## REASONS FOR CHANGE

Steam Tunnel temperatures are about 10°f higher than the values predicted in 1982.

Risk of unnecessary isolations and scrams

Increased probability of challenging safety systems

Nuisance alarms

SETPOINT AND TEMPERATURES  
MST - NORTH

RECORDED OPERATING TEMP.

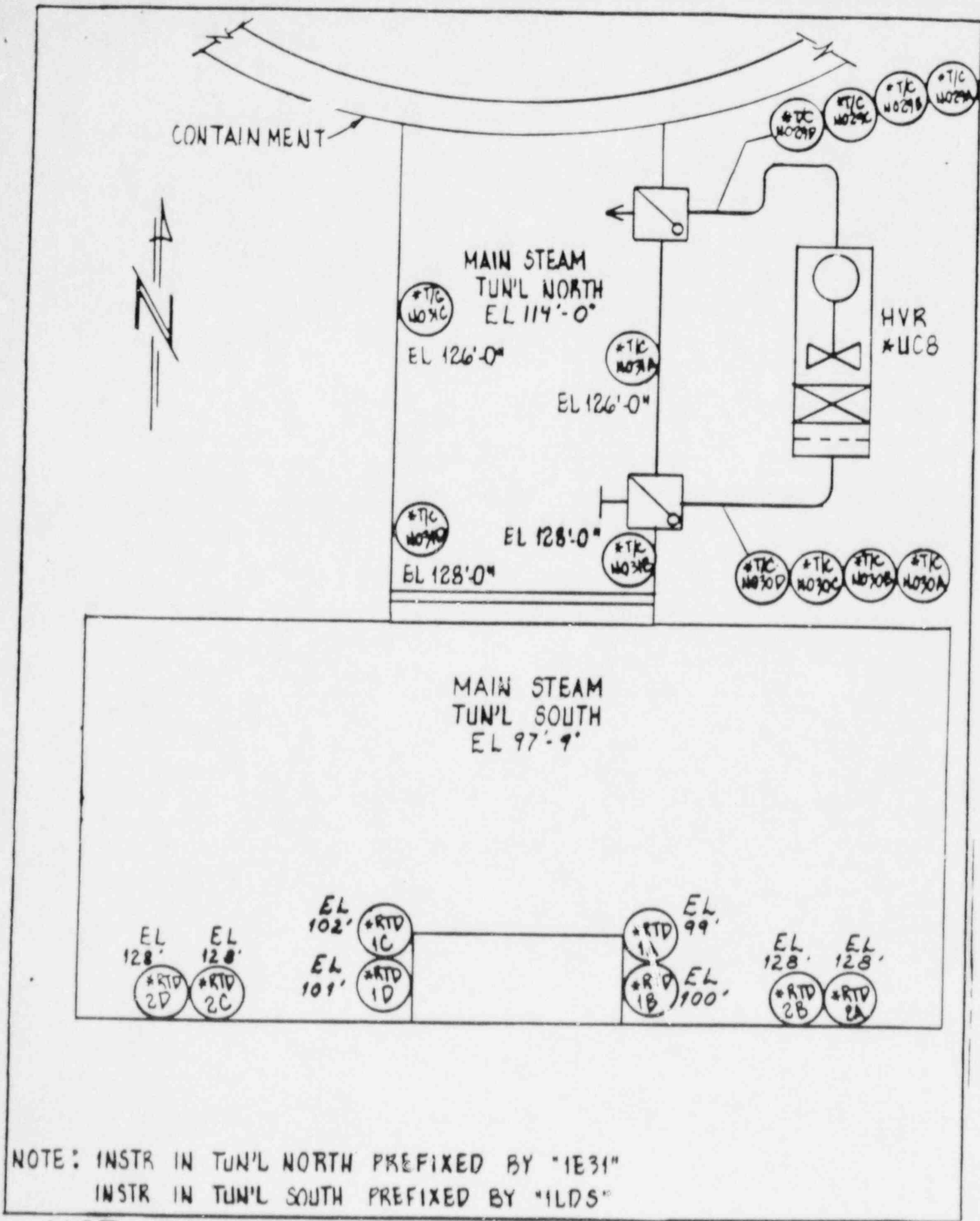
	<u>AREA</u>	<u>DELTA</u>
TYPICAL WINTER EXTREME (1988),F	105	39
TYPICAL SUMMER EXTREME (1987),F	132	22

TECH SPEC VALUES

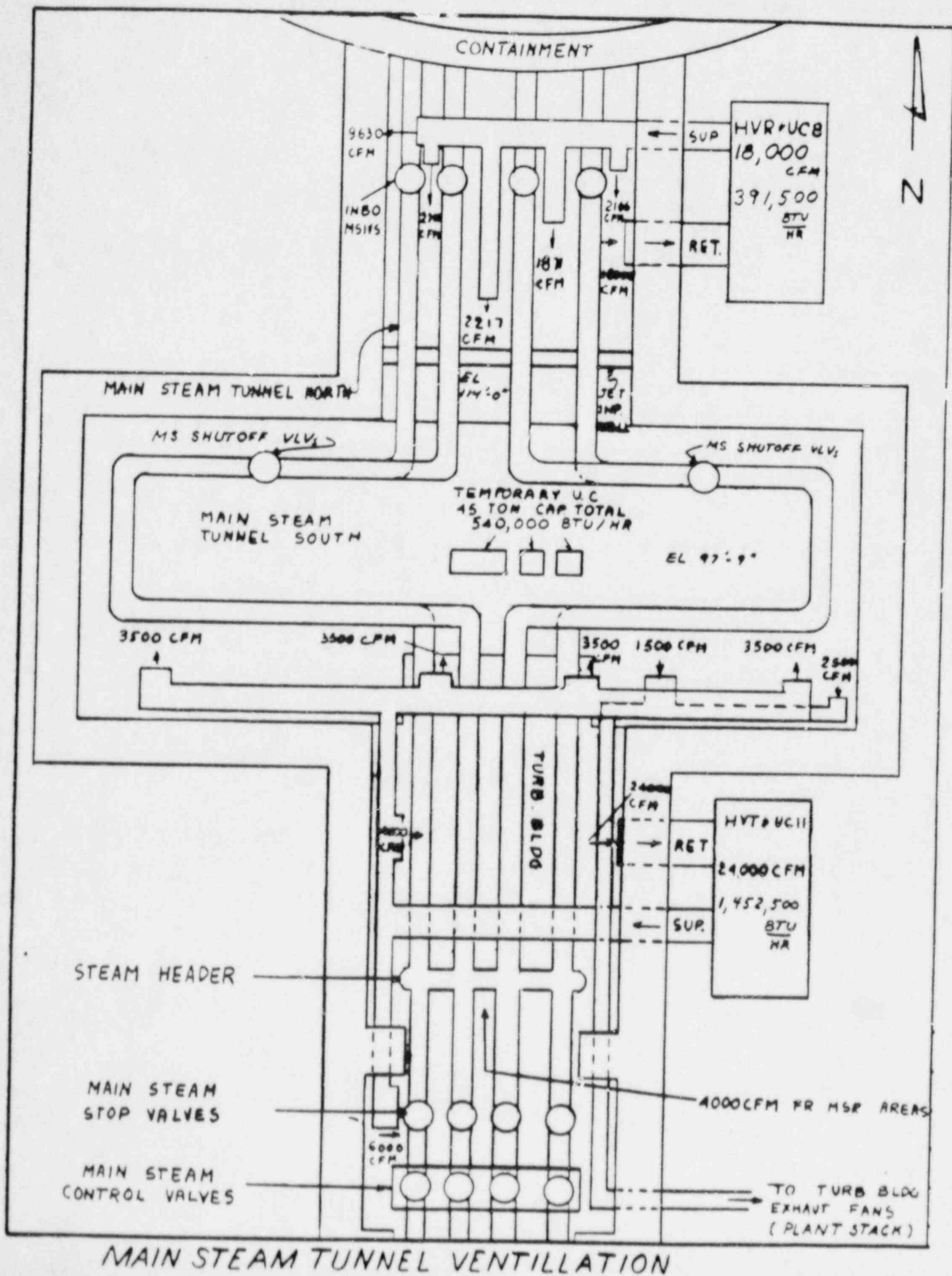
	<u>CURRENT</u>		<u>PROPOSED</u>	
	<u>AREA</u>	<u>DELTA</u>	<u>AREA</u>	<u>DELTA</u>
INITIAL TEMP. FOR CALCULATION,F	105	---	128	---
CALCULATED PROCESS SAFETY LIMIT,F	148	59	154	65
TECH. SPEC. ALLOWABLE VALUE,F	142.5	55	148.5	61
TECH SPEC. SETPOINT,F	135	51	141	57

## PURPOSE OF TEMPERATURE MONITORS

- 1) To provide Control Room Alarm of a steam leak.
- 2) To automatically isolate a leak of 25 gal/min or larger.



MST TEMPERATURE DETECTOR LOCATIONS

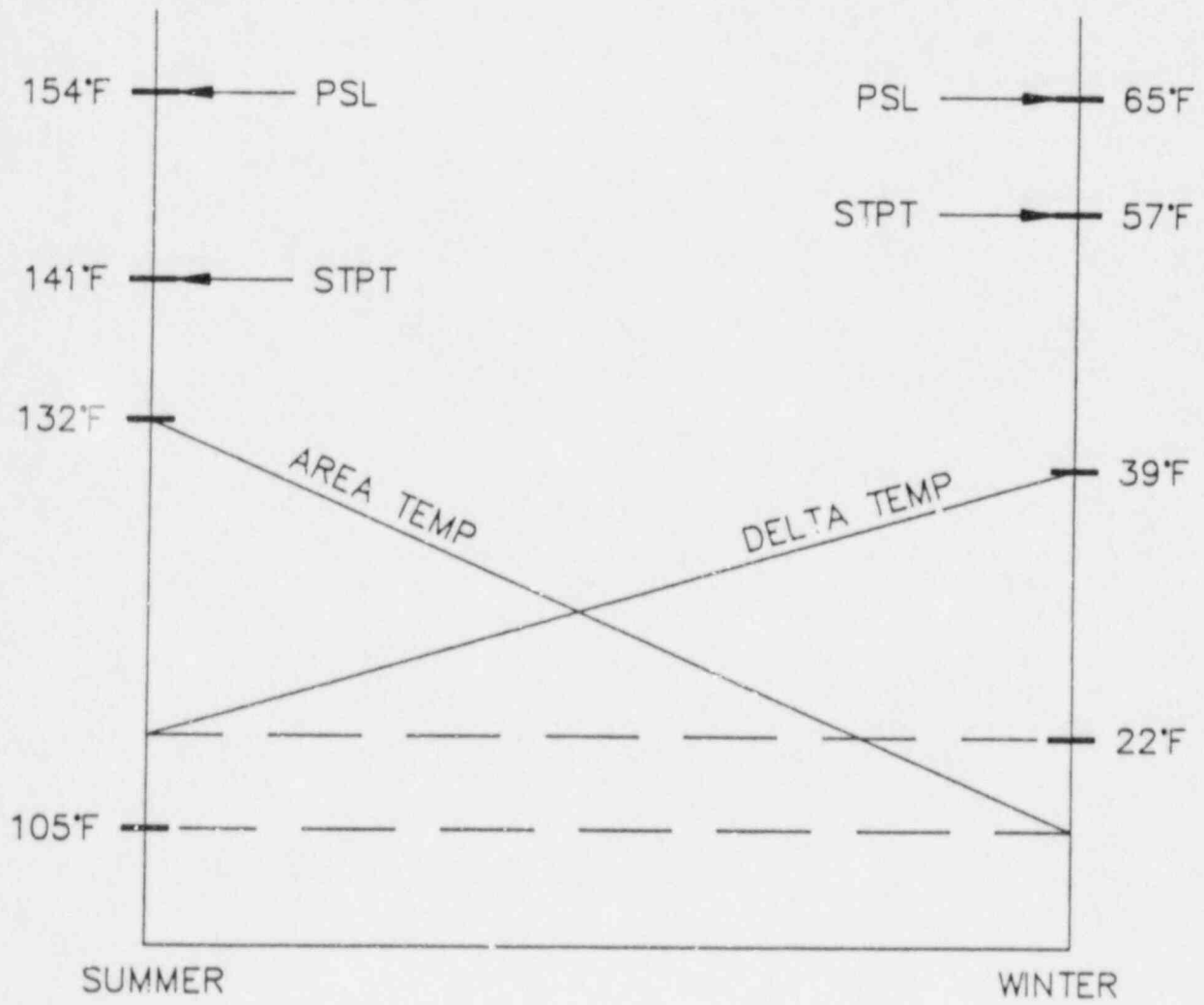


MAIN STEAM TUNNEL VENTILLATION

DESCRIPTION OF MODEL  
(THREED.VER 12. LEV06)

- 1) Calculates room temperatures vs. time for given leak rate.
- 2) Input initial room temperatures.
- 3) Input HVAC flow rate.
- 4) Input HVAC supply temperatures.
- 5) Input heat sinks.
- 6) Analytical limit chosen as temperature obtained in one hour for a 25 GPM leak rate.

# SENSITIVITY TO SEASONAL VARIATIONS





## CONCLUSIONS

### THE PROPOSED CHANGE:

- 1) Does not adversely affect safety.
  - a) conservative leak detection design basis is maintained
  - b) initial temperatures based on actual recorded temperatures providing for a modest setpoint increase
  - c) HVAC still modeled conservatively
  - d) setpoints maintain margin to account for inst. accur. and drift
  - e) redundant instrumentation exists for MST pipe breaks/leaks
- 2) Increases plant reliability by reducing the risk of unnecessary isolations and consequent scrams.
- 3) Reduces the risk of unnecessary challenges to safety systems.
- 4) Eliminates nuisance alarms.

GENERAL ELECTRIC COMPANY

LEAK DETECTION

OUTSIDE REACTOR COOLANT PRESSURE BOUNDARY

DESIGN BASIS

GENERAL ELECTRIC COMPANY

LEAK DETECTION DESIGN BASIS

BASIS PHILOSOPHY

LEAK BEFORE BREAK  
PROTECT ENVIRONMENTAL LIMITS  
LIMIT RADIOLOGICAL CONSEQUENCES

REQUIREMENTS

REACTOR COOLANT PRESSURE BOUNDARY (RCPB)

REGULATORY GUIDE 1.45  
STANDARD REVIEW PLAN 5.2.5

OUTSIDE RCPB

NO SPECIFIED REQUIREMENTS

GENERAL ELECTRIC COMPANY

LEAK DETECTION DESIGN BASIS

BASIS

RCPB

25 GPM - IDENTIFIED

5 GPM - UNIDENTIFIED

OUTSIDE RCPB

25 GPM - RECOMMENDED ISOLATION TRIP

5 GPM - RECOMMENDED ALARM

CONSISTENT WITH RCPB

LEAK BEFORE BREAK CONFIRMATION

RADIOLOGICAL CONCERNS BOUNDED BY MAIN STEAM LINE BREAK