TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

May 27, 1983

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

In the Matter of	)	Docket No. 50-327
Tennessee Valley Authority	)	50-328

Please refer to your November 12, 1981 letter to H. G. Parris which requested additional information on the fire protection program at the Sequoyah Nuclear Plant and to my subsequent response to you dated March 3, 1982.

Recent review of this information by TVA for insurance purposes has identified the need to revise the response to NRC question No. 3. The enclosed revision will clarify the instrumentation loops identifed by the Fire Shutdown Logic Diagram as being required for hot or cold shutdown.

If you have any questions concerning this matter, please get in touch with K. P. Parr at FTS 858-2685.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

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3. Provide a list of system parameters which must be monitored to assure proper plant conditions during hot shutdown and cold shutdown operation. Provide a list of instrumentation/alarms which will monitor these system parameters and component functions in the event of fire (e.g., pressurizer pressure indicator, cold leg/hot leg temperature, steam generator pressure and level, pump running indicators, condensate storage tank level). Verify that the applicable indicators are available in the MCR, ACR, and other remote shutdown boards.

TVA RESPONSE

The parameters listed below are identified in the Fire Shutdown Logic Diagram (FSLD) as being essential for hot and cold shutdown:

Steam Generator Level
Steam Generator Pressure
Pressurizer Level
Pressurizer Pressure

Therefore, sufficient instrumentation (alarms, indicators, records, etc.) regarding these parameters have been verified to be available to the operator in the MCR and, separately, in the ACR in the event of a fire within the plant.

The following intruments are protected from fire by Kaowool blankets from the reactor building wall to the MCR wall:

Steam Generator Level Instrument Loops in MCR required by FSLD

SG #1	LT-3-38,39,42
SG #2	LT-3-51,52,55
SG #3	LT-3-93,94,97,172
SG #4	LT-3-106,107,110

Steam Generator Pressure Instrument Loops in MCR required by FSLD

SG #1	PT-1-2A,2B,5
SG #2	PT-1-9A,9B,12
SG #3	PT-1-20A,20B,23
SG #4	PT-1-27A,27B-30

Pressurizer Level Instrument Loops in MCR required by FSLD

LT-68-339,335,320

Pressurizer Pressure Instrument Loops in MCR Required by FSLD

PT-68-340,334,323,322

The following instruments will also provide sufficient data regarding the parameters required to function by the FSLD in the ACR. This instrumentation will be available in the event of a fire in the MCR. See the response to concern No. 2 for MCR-ACR isolation.

Steam Generator Level Instrumentation Loops in ACR required by FSLD

SG #1 LT-1-164
SG #2 LT-1-156
SG #3 LT-1-148
SG #4 LT-1-171

Steam Generator Pressure Instrument Loops in ACR required by FSLD

SG #1 PT-1-1C
SG #2 PT-1-8C
SG #3 PT-1-19C
SG #4 PT-1-26C

Pressurizer Level Instrument Loops in ACR required by FSLD

LT-68-326C, 325C

Pressurizer Pressure Instrument Loops in ACR Required by FSLD

PT-68-~~336~~C, 337C, 342C

The parameters given below are not required by the fire shutdown logic to be available for the operator in the event of a fire within the plant. However, the parameters instrument loops have been wrapped in Kaowool blankets. Therefore, these parameters will be available to the operator in the MCR.

Reactor Coolant System Temperature

TE-68-2A, 2B: Loop 1 Hot Leg RTD Manifold Temperature
*TE-68-1: Loop 1 Hot Leg Temperature
TE-68-18: Loop 1 Hot Leg Temperature

TE-68-25A, 25B: Loop 2 Hot Leg RTD Manifold Temperature

*TE-68-43: Loop 3 Hot Leg Temperature
TE-68-44A, 44B: Loop 3 Hot Leg Manifold Temperature
TE-68-60: Loop 3 Cold Leg Temperature

TE-68-67A, 67B: Loop 4 Hot Leg RTD Manifold Temperature.

*Instrument loops also available in the ACR.

Reactor Coolant System Flow

FT-68-6A, 6B, 6D: Loop 1 Coolant Flow
FT-68-29A, 29B, 29D: Loop 2 Coolant Flow
FT-68-48A, 49B, 49D: Loop 3 Coolant Flow
FT-68-71A, 71B, 71D: Loop 4 Coolant Flow

Steam Generator Feedwater Inlet Flow Loops

SG #1: FT-3-35A, 35B
SG #2: FT-3-48A, 48B
SG #3: FT-3-90A, 90B
SG #4: FT-3-103A, 103B

Steam Generator Steam Header Flow Loops

SG #1: FT-1-3A,3B
SG #2: FT-1-10A,10B
SG #3: FT-1-21A,21B
SG #4: FT-1-28A,28B

Miscellaneous Pressure Instrument Loops

PT-68-66: RCS Loop #4 Hot Leg Pressure
PT-1-72: High Pressure Turbine Impulse Chamber Pressure
PdT-30-42,43: Containment Pressure

Miscellaneous Level Instrument Loops

LT-63-51,53 SIS RWST Level
LT-63-176,177,179 Containment Level

Given below are additional parameters and instrumentation located in the ACR. The instrument cables between the reactor building and the ACR wall are not protected from fire. However, these instruments are not required by the FSLD to function in the event of fire in the ACR or between the ACR and reactor building. This instrumentation would be used only in the event of a fire in the MCR and is electrically independent of the instruments located in the MCR.

PT-1-1C,-8C,-19C,-26C	Steam Generators Nos. 1, 2, 3, 4, respectively, pressure 0-1200 psig
PT-3-122C, 132C	Auxiliary Feedwater Pumps A&B backpressure 0-1600 psig
FT-3-142C	Turbine Driven Auxiliary Feedwater Pump Flow 0-1000 gpm
FT-3-147C,-155C,-163C,-170C	Steam Generators Nos. 1, 2, 3, 4, respectively, Auxiliary Feedwater Flow. 0-440 gpm.
LT-3-148,-156,-164,-171	Steam Generators Nos. 1, 2, 3, 4, respectively, Level 0-144 in water column
PT-30-30C	Containment Pressure -1-+15 psig
TE-62-80C	Letdown Htx Outlet Temp 50-150 F
PT-62-92C	Charging Header Pressure 0-3000 psig
FT-62-93C	Charging Header Flow 0-200 gpm

LT-62-129C	Volume Control Tank level 0-100%
PT-63-59C,-83C,-102C,-120C	SIS Accumulator Tanks Nos. 1, 2, 3, 4, respectively, Pressure 0-700 psig
FT-63-173C	RHR Hot Leg Injection or Recirc After LOCA Flow 0-7000 gpm
FT-63-91C,-92C	RHR Pumps Discharge Flow 0-4500 gpm
FT-67-61C, 62C	ERCW Supply Headers A&B Flow 0-20,000 gpm
TE-68-1C,-24C,-43C,-65C	RCS Loops Nos. 1, 2, 3, 4, respectively, Hot Leg Temp 0-650 F
PT-68-311C	RCS PRT Pressure 0-10 psig
LT-68-312C	RCS PRT Level 0-100 in water column
LT-68-325C,-326C	RCS Pressurizer Level 0-525 in water column
PT-68-336C,-337C	RCS Pressurizer Pressure 1700-2500 psig
PT-68-342C	RCS Pressurizer Pressure 0-3000 psig
PT-70-17C,-24C	Component Cooling System (CCS) Htx A&B Inlet Pressure 0-120 psig
LT-70-63C,-99C	CCS Surge Tank Level 0-100%
FT-70-159C,-165C	CCS Flow to RHR Htx A&B 0-6000 gpm
FT-70-164C	CCS Misc Eqpt Supply Hdr Flow 0-5000 gpm
TE-74-38C,-40C	RHR Htx A&B Outlet Temp 50-400 F
RR-90-210	Source Range Neutron Flux $1-10^6$

Therefore, we conclude that essential instrumentation, as required by the FSLD, and other desirable instrumentation will be available to the operator in the MCR or ACR. This instrumentation will provide the operators with sufficient parameter data to obtain and maintain hot and cold shutdown.