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J. L. Wilson
Vice President, Sequoyah Nuclear Plant

September 30, 1992

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 2 - DOCKET NO. 50-328 - FACILITY OPERATING LICENSE DPR-79 - LICENSEE EVENT REPORT (LER) 50-328/92012

The enclosed LER provides details concerning a manual start of the auxiliary feedwater system resulting from a secondary system perturbation. This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv) as an event that resulted in the manual actuation of engineered safety features.

Sincerely,

J. L. Wilson

Enclosure
cc: See page 2

IE22
1/1

cc (Enclosure):
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NRC Form 366 (6-89) | U.S. NUCLEAR REGULATORY COMMISSION | Approved OMB No. 3150-0104 Expires 4/30/92

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Sequoyah Nuclear Plant, Unit 2 | DOCKET NUMBER (2): 05000328 | PAGE (3): 1 OF 0 5

TITLE (4): Manual Auxiliary Feedwater Start as a Result of a Secondary System Perturbation.

EVENT DAY (5)			LER NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
09	04	92	92	012	00	09	30	92		05000
										05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)			
POWER LEVEL (10)	08	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
J. W. Proffitt, Compliance Licensing	615 843-6651

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On September 4, 1992, at 0214 Eastern daylight time (EDT), Fire Operations personnel reported a fire at the B-phase main transformer neutral bushing to the main control room. The Unit 1 assistant shift operations supervisor was dispatched to the area as the incident commander. An emergency shutdown was initiated utilizing Abnormal Operating Instructions. Unit load was decreased at a rate of 5 percent per minute, and at 9 percent reactor power, the main turbine was manually tripped. At approximately 0256 EDT, with reactor power at approximately 8 percent, the isolation valves on all three strings of intermediate pressure condensate heaters automatically began to close as a result of high-high heater levels. Operations personnel recognized that suction would be lost to the operating main feedwater (MFW) pump, manually started all auxiliary feedwater (AFW) pumps, and tripped the operating MFW pump. Reactor power was reduced, and the plant was stabilized at 1 percent rated thermal power.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

I. PLANT CONDITIONS

Unit 2 was in power operation at approximately 8 percent reactor thermal power.

II. DESCRIPTION OF EVENT

A. Event

On September 4, 1992, at 0214 Eastern daylight time (EDT), Fire Operations personnel reported a fire at the B-phase main transformer (EIIS Code EL) neutral bushing to the main control room. The Unit 1 assistant shift operations supervisor was dispatched to the area as the incident commander. Emergency actions were taken to combat the fire using a dry chemical in suppressing the fire, but due to the heat present at the bushing, the fire reignited. An emergency shutdown was commenced utilizing Abnormal Operating Instructions in order to deenergize the transformer and remove the heat source. Unit load was decreased from 100 percent power at a rate of 5 percent per minute, and at 9 percent reactor power, the main turbine was manually tripped. With the transformer removed from service, the fire was extinguished.

At approximately 0256 EDT, with reactor power at approximately 8 percent, the isolation valves on all three strings of intermediate pressure condensate heaters automatically began to close as a result of high-high heater levels. Operations personnel recognized that suction would be lost to the operating main feedwater (MFW) (EIIS Code SJ) pump, manually started all auxiliary feedwater (AFW) (EIIS Code BA) pumps, and tripped the operating MFW pump. Reactor power was reduced, and the plant was stabilized at 1 percent rated thermal power.

B. Inoperable Structures, Components, or Systems That Contributed to the Event

None.

C. Dates and Approximate Times of Major Occurrences

1. September 4, 1992 at 0214 EDT — A fire on the 2B main transformer was reported to the main control room.

2. September 4, 1992 at 0220 EDT — Load reduction was started in accordance with procedures at a rate of 5 percent per minute.

3. September 4, 1992 at 0241 EDT — With the unit at approximately 9 percent power, the turbine was manually tripped off-line.

4. September 4, 1992 at 0256 EDT — AFW was manually started, and the MFW pump was tripped after the No. 2 heater string isolated.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

5. September 4, 1992 at 0257 EDT — The unit entered Mode 2.

6. September 8, 1992 at 0526 EDT — NRC was notified of the AFW start.

D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

The No. 2 heater string isolation was discovered during observations of plant parameters by main control room Operations personnel following the rapid runback as a result of the fire on the transformer.

F. Operator Actions

When the fire was reported, Operations personnel were immediately dispatched to the area to determine the extent of the fire and assume the incident commander responsibilities. With the firefighting efforts in progress, Operations performed a rapid power reduction, in accordance with plant procedures, and removed the main generator from service. As a result of the No. 2 heater string isolation, Operations personnel immediately started the AFW pumps and tripped the main feedwater pump (MFP). The plant was subsequently placed in a stable condition.

G. Safety System Responses

The auxiliary feedwater system performed as expected.

III. CAUSE OF EVENT

A. Immediate Cause

Auxiliary feedwater was manually started as a result of a heater string isolation, following a condensate and feedwater transient resulting from the rapid reduction in power.

B. Root Cause

The root cause of the feedwater heater isolation was determined to be a normal system response following a rapid power reduction. It was determined that, under the transient condition (i.e., rapid power reduction), the pressure in the No. 2 heater would equalize with that of the No. 3 heater drain tank and then would not drain. Therefore, a high level in the heaters occurred and the subsequent isolation of the heater string.

C. Contributing Factors

None.

IV. ANALYSIS OF EVENT

Plant equipment required to operate after AFW was manually started performed as expected, and plant parameters were within expected ranges. Therefore, the event did not adversely affect the health and safety of plant personnel or the public.

V. CORRECTIVE ACTION

A. Immediate Corrective Actions

When the fire was reported, Operations personnel were immediately dispatched to the area to determine the extent of the fire and assume the incident commander responsibilities. With the firefighting efforts in progress, Operations performed a rapid power reduction, in accordance with plant procedures, and removed the main generator from service. As a result of the No. 2 heater string isolation, Operations personnel immediately started the AFW pumps and tripped the MFP. The plant was subsequently placed in a stable condition.

The 2B main transformer was repaired, tested, and returned to service.

B. Corrective Actions to Prevent Recurrence

None.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

VI. ADDITIONAL INFORMATION

A. Failed Components

None.

B. Previous Similar Events

A review of previously reported events identified several events associated with condensate and feedwater heater isolations. Although these events involved heater string isolations, the problems were not similar (i.e., involved failure of components) to the problem discussed in this LER. Therefore, the corrective action could not have prevented this event.