TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
500C Chestnut Street Tower II

JUN 11 1979

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - DBA MOVEMENTS OF STEEL CONTAINMENT NOT PROPERLY ACCOUNTED FOR IN DESIGN - NCR CEB 79-19 - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Tom Burdette on May 11, 1979, in accordance with 10 CFR 50.55(e). Enclosed is our first interim report. We expect to submit our next report by October 9, 1979.

If you have any questions concerning this matter, please get in touch with D. L. Lambert at FTS 854-2581.

Very truly yours,

J. E. Gilleland
Assistant Manager of Power

Enclosure
cc: Mr. John G. Davis, Acting Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
DBA MOVEMENTS OF STEEL CONTAINMENT
NOT PROPERLY ACCOUNTED FOR IN DESIGN
NCR CEB 79-19
10 CFR 50.55(e) FIRST INTERIM REPORT

Description of Deficiency

Piping which penetrates the steel containment vessel (SCV) with rigid penetrations was supported without proper consideration for all design basis accident (DBA) movements of the SCV. In the original design of the penetrations and their supports, two incorrect assumptions were used for analysis. These assumptions and their consequences are described below.

The first incorrect assumption was that DBA movements of the SCV were assumed to be only in an outward direction from its steady state condition when actually there is movement in both the inward and outward directions. This lack of consideration for all deflections of the SCV has resulted in several supports designed with inadequate clearance in the unrestrained direction and could result in overstressing the pipe and/or penetrations.

The second incorrect assumption was that the SCV movements would not be severe enough to lock the snubbers. This means less pipe flexibility is in fact available to accommodate deflection than was originally thought which in turn may result in excessive stresses in the piping and penetrations and may also overload the snubbers.

The nonconformance affects 53 penetrations in each unit. The attached table lists 37 affected penetrations which are safety related. The list is identical for units 1 and 2. Eight of those 37 are required for safe shutdown.

Interim Progress

Faced with the necessity to reanalyze, TVA has decided to generate time history movement data for each of the six primary system DBAs at each containment nozzle location. This rigorous analysis will ensure containment inertial as well as displacement effects on pipe are conservatively considered.

Reanalysis of all affected piping systems and all resulting hardware modifications will be completed before initial criticality.

The applicability of this deficiency on TVA's other PWRs is being evaluated.

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SEQUOYAH NUCLEAR PLANT

Safety Related Piping Penetrations Affected by NCR CEB 79-19

Penetration Number	System	Pipe Size	Service	Required For Safe Shutdown
16	CVCS (Supply)	3	Normal charging to Regen Hx	No
29	CCS (Disch)	6	R.C. Pump Oil Cooler	No
35	CCS (Disch)	6	Excess Letdown Hx	Yes
40A	AFW (Supply)	4	Feedwater Bypass	Yes
40B	AFW (Supply)	4	Feedwater Bypass	Yes
43A	CVCS (Supply)	2	Sealwater Injection - RC Pump	No
43B	CVCS (Supply)	2	Sealwater Injection - RC Pump	No
43C	CVCS (Supply)	2	Sealwater Injection - RC Pump	No
43D	CVCS (Supply)	2	Sealwater Injection - RC Pump	No
44	CVCS (Disch)	4	Sealwater Return - RC Pump	No
48A	Containment Spray	12	Spray Header	Yes
48B	Containment Spray	12	Spray Header	Yes
49A	RHR Spray	8	Spray Header	Yes
49B	RHR Spray	8	Spray Header	Yes
50A	CCS (Disch)	3	RC Pump Thermal Barrier	No
50B	CCS (Supply)	3	RC Pump Thermal Barrier	No
52	CCS (Supply)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
53	CCS (Supply)	6	RCP, CRDM, Lower Cont. Vent Cooler	Yes
56	ERCW (Supply)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
57	ERCW (Disch)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
58	ERCW (Supply)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
59	ERCW (Disch)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
60	ERCW (Supply)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
61	ERCW (Disch)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
62	ERCW (Supply)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
63	ERCW (Disch)	6	RCP, CRDM, Lower Cont. Vent Cooler	No
68	ERCW (Supply)	2	Upper Containment Vent Cooler	No
69	ERCW (Supply)	2	Upper Containment Vent Cooler	No
70	ERCW (Disch)	2	Upper Containment Vent Cooler	No
71	ERCW (Disch)	2	Upper Containment Vent Cooler	No
72	ERCW (Disch)	2	Upper Containment Vent Cooler	No
73	ERCW (Disch)	2	Upper Containment Vent Cooler	No

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SEQUOYAH NUCLEAR PLANT

Safety Related Piping Penetrations Affected by NCR CEB 79-19

Penetration Number	System	Pipe Size	Service	Required For Safe Shutdown
74	ERCW (Supply)	2	Upper Containment Vent Cooler	No
75	ERCW (Supply)	2	Upper Containment Vent Cooler	No
82	Fuel Pool Cooling	6	From Refueling Cavity	No
83	Fuel Pool Cooling	4	To Refueling Cavity	No
110	SIS-UHI (Supply)	2	From CVCS Disch to UHI	No