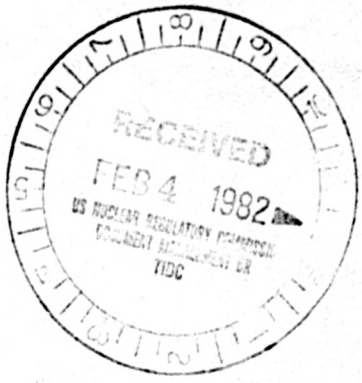
TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

January 26, 1982

WBRD-50-390/82-07



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:

WATTS BAR NUCLEAR PLANT UNIT 1 - CONTAINMENT PENETRATION PROTECTION - WBRD-50-390/82-07 - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on December 7, 1980 in accordance with 10 CFR 50.55(e) as NCR WBN EEB 8111. Enclosed is our first interim report. The submittal date of this report was discussed with Inspector R. V. Crlenjak on Januar, 5 and January 25, 1982. We expect to submit our next report by July 30, 1982.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure
cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

OFFICIAL COPY
IE 27

ENCLOSURE
WATTS BAR NUCLEAR PLANT UNIT 1
CONTAINMENT PENETRATION PROTECTION
10 CFR 50.55(e)
WBRD-50-390/82-07
FIRST INTERIM REPORT

Description of Deficiency

In a design review to determine if the control power cable penetrations of the containment were adequately protected electrically against overloads and short circuits, it was found that some of the cable penetrations were not adequately protected.

The data used to determine the electrical penetrations current ratings was the qualification test report. The data used from the report is shown in Table 1.

Table 1

Penetration Size (AWG)	Nominal Capacity (Amps)	Maximum[1] Capacity (Amps)	STOL[2] Current (Amps)	Short Circuit (I^2t)
12	6	9.39	44	2.23×10^5
10	10	16.43	74	5.00×10^5
8	18	23.49	133	1.39×10^6

1. Maximum extrapolated current to raise cable temperature to 90°C.
2. Cable will withstand 10 seconds at the STOL rate.

Each penetration was checked to determine if the protective device or devices would interrupt power to the penetration before exceeding the maximum current rating for long-time overload, short-time overload (STOL), and short circuit conditions.

It was found that 18 electrical penetrations were not adequately protected for the long-time overload condition and that four electrical penetrations did not have redundant overcurrent protective devices for a short circuit. The cause of the deficiency was a design error.

Interim Progress

The specific corrective action is shown in Table 2. The penetrations listed under paragraph A are those that have inadequate long-time overload protection and those listed under paragraph B are those that do not have redundant overcurrent protection devices. Further information will be provided in our next report.

Table 2

A. The following penetrations can be damaged by faults without opening the protective device:

Penetration & Size	Cable No.	Corrective Action
10-12	P2547	Change to #8 penetration
10-12	P2587	Change to #8 penetration
36-12	1PL4795B	Replace 10 amp KWN fuse with 6 amp KWN fuse
36-12	1PL4843B	Replace 10 amp KWN fuse with 6 amp KWN fuse
36-12	1PL4766B	Replace 10 amp KWN fuse with 6 amp KWN fuse
44-12	1PL4825A	Replace 10 amp KWN fuse with 6 amp KWN fuse
46-12	P2590	Change to #8 penetration
46-12	P2550	Change to #8 penetration
48-12	1PL4612	Replace 10 amp KWN fuse with 6 amp KWN fuse
48-12	P2570	Change to #8 penetration
48-12	P2610	Change to #8 penetration
51-12	1M1750	Replace 20 amp Shamut fuse with 7 amp Shamut fuse
52-12	1PL4889B	Replace 10 amp KWN fuse with 6 amp KWN fuse
52-12	1PL4791B	Replace 10 amp KWN fuse with 6 amp KWN fuse
52-12	1PL4770B	Replace 10 amp KWN fuse with 6 amp KWN fuse
53-12	P2567	Change to #8 penetration
53-12	P2607	Change to #8 penetration
53-8	1RM1	Parallel two #8 penetrations and replace 40 amp Shamut fuse with 30 amp Shamut fuse

B. No redundant trip device to trip on short circuit.

36-8	Ltg Ckt	Install 15 A fuse, Shamut AT-DE in hot leg
36-8	Ltg Ckt	Install 15 A fuse, Shamut AT-DE in hot leg
36-8	Ltg Ckt	Install 15 A fuse, Shamut AT-DE in hot leg
52-12	1PL4861B	Install 6 amp KWN fuse in hot leg