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SUBJECT: Final deficiency rept re undersized support welds on Pall Trinity (PT) micro filters. Initially reported on 931006. Evaluation of PT design repts listed in Table 2 & weld size requirements for filters listed in Table 1 completed.

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JAN 12 1994

BLRD-50-438/93-10
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10 CFR 50.55(e)

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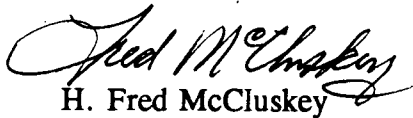
In the Matter of the Application of)
Tennessee Valley Authority)

Docket Nos. 50-438
50-439

**BELLEFONTE NUCLEAR PLANT (BLN) - UNDERSIZED SUPPORT WELDS ON
PALL TRINITY MICRO FILTERS - BLRD-50-438/93-10 AND BLRD-50-439/93-10 -
FINAL REPORT**

The subject deficiency was reported to the NRC Operations Center on October 6, 1993 in accordance with 10 CFR 50.55(e)(3) as Problem Evaluation Report (PER) BLPER930064. Enclosure 1 provides a final report for the subject deficiency. Enclosure 2 provides TVA's commitment for corrective actions to resolve the subject deficiency.

Should there be any questions regarding this information, please telephone G. M. Morrison, Acting BLN Site Licensing Manager, at (205) 574-8057.


H. Fred McCluskey

Enclosures

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ENCLOSURE 1

BELLEFONTE NUCLEAR PLANT (BLN) - UNITS 1 AND 2 UNDERSIZED SUPPORT WELDS ON PALL TRINITY MICRO FILTERS PROBLEM EVALUATION REPORT (PER) BLPER930064 BLRD-50-438/93-10 AND BLRD-50-439/93-10

FINAL REPORT

Description of Deficiency

A condition of undersized support welds on Pall Trinity filters supplied to TVA's Watts Bar Plant (WBN) was identified on NRC Report 50-390/89-200. A generic applicability review (GAR) for TVA's BLN discovered an undersized weld on a Pall Trinity filter at BLN. The potential extent of this problem is given by Table 1 which lists all Pall Trinity filters located in safety-related systems or forming the boundaries for piping systems with safety-related components. The condition was reported to the NRC on October 6, 1993 in accordance with 10CFR50.55(e)(3) as PER BLPER930064. As a result of the reportability evaluation, the PER has been upgraded to a Significant Corrective Action Report (SCAR), BLP930105SCA.

Safety Implications

The failure of a support weld would change the stress in the attached piping. This unanalyzed condition could overstress ASME piping and potentially result in a pressure boundary failure.

Corrective Actions

TVA has completed an evaluation of the Pall Trinity Design Reports (see Table 2) and established weld size requirements for the BLN Unit 1 & 2 filters listed in Table 1. The results of this evaluation have been documented in BLN Calculation CS-600-00385, "Acceptability of Pall Trinity Filters Identified in BLPER930064." In addition, all Unit 1 and Common filters listed in Table 1 have been inspected by a BLN Quality Control Inspector, and the results of that inspection are documented in both the Sequence Control Chart # C-1KC-M005 and in the above referenced calculation. Based on the calculation and the completed weld inspections, eleven of the seventeen filters inspected require some rework while six were found to be acceptable. The results of the Unit 1 and Common inspection and evaluation of Pall Trinity filters is given in Table 3. Corrective actions to resolve the deficiencies for Unit 1 and Common will be completed one year before fuel load for Unit 1. Inspections and corrective action plans for Unit 2 filters will follow actions for Unit 1 with the expectation that similar findings will result. However, Unit 2 efforts have been delayed based on BLN's current emphasis on completing Unit 1 & Common. Corrective actions for Unit 2 will be completed one year before fuel load for Unit 2.

TABLE 1

PALL TRINITY FILTERS REQUIRING INSPECTION

<u>UNID NO.</u>	<u>DESCRIPTION</u>	<u>LOCATION</u>	<u>ELEV.</u>	<u>INST. DWG.</u>
1NV-MFLT-009	SEAL INJECTION	A04&R	600'	3BW0419-NV-01
1NV-MFLT-010	SEAL INJECTION	A04&R	600'	3BW0419-NV-01
1NV-MFLT-011	PURIFICATION	A06&T	658'	3BW0419-NV-15
1NV-MFLT-012	PURIFICATION	A06&T	658'	3BW0419-NV-15
1NV-MFLT-013	PURIF./DEMIN.	A06&W	658'	3BW0419-NV-10
1KC-MFLT-008A	COMPONENT COOL.	A03&R	629'	3BW0456-KC-08
1KC-MFLT-009B	COMPONENT COOL.	A03&R	629'	3BW0456-KC-08
1NM-MFLT-025	SPENT FUEL	A07&W	644'	3BW0454-NM-03
1NM-MFLT-026	SPENT FUEL	A07&W	644'	3BW0454-NM-03
1NM-MFLT-029	SF SKIMMER	A07&W	644'	3BW0454-NM-03
1RJ-MFLT-316A	AIR PRE-FILTER	A04&Q	610'	5AW0911-IO-18
1RJ-MFLT-318A	AFTER FILTER	A04&Q	610'	5AW0911-IO-18
1RJ-MFLT-319B	AIR PRE-FILTER	A03&Q	610'	5AW0911-IO-18
1RJ-MFLT-321B	AFTER FILTER	A03&Q	610'	5AW0911-IO-18
0NB-MPLT-639	BORIC ACID	A06&R	649'	3AW0478-NB-04
0NB-MFLT-640	BORIC ACID	A06&R	649'	3AW0478-NB-04
0WG-MFLT-007	WASTE GAS	A08&S	629'	3BW0480-WD-16
2NV-MFLT-009	SEAL INJECTION	A11&R	600'	3BW0419-NV-01
2NV-MFLT-010	SEAL INJECTION	A11&R	600'	3BW0419-NV-01
2NV-MFLT-011	PURIFICATION	A09&T	658'	3BW0419-NV-15
2NV-MFLT-012	PURIFICATION	A09&T	658'	3BW0419-NV-15
2NV-MFLT-013	PURIF./DEMIN.	A09&W	658'	3BW0419-NV-10
2KC-MFLT-008A	COMPONENT COOL	A12&R	629'	3BW0456-KC-09
2KC-MFLT-009B	COMPONENT COOL	A12&R	629'	3BW0456-KC-09
2NM-MFLT-027	SPENT FUEL	A08&W	644'	3BW0454-NM-03
2NM-MPLT-028	SPENT FUEL	A08&W	644'	3BW0454-NM-03
2NM-MFLT-030	SF SKIMMER	A08&W	644'	3BW0454-NM-03
2RJ-MFLT-316A	AIR PRE-FILTER	A11&R	610'	5AW0911-IO-18
2RJ-MFLT-318A	AFTER FILTER	A11&R	610'	5AW0911-IO-18
2RJ-MFLT-319B	AIR PRE-FILTER	A12&R	610'	5AW0911-IO-18
2RJ-MFLT-321B	AFTER FILTER	A12&R	610'	5AW0911-IO-18

TABLE 2

PALL TRINITY DESIGN REPORTS FOR BLN FILTERS

- 1) Pall Trinity Design Report No. 501-49, "Nozzle Loading Analysis - Spent Fuel Skimmer (and others)," Pall Trinity Micro P/N 5EHD10703-018EE32, October 25, 1974
- 2) Pall Trinity Design Report No. 501-60, "Seal Injection Filter," Pall Trinity Micro P/N 5EHD10602-091-EC-32, March 10, 1975
- 3) Pall Trinity Design Report No. 501-64, "Boric Acid Filter," Pall Trinity Micro P/N 5EHD10703-092-EC-32, April 23, 1975
- 4) Pall Trinity Design Report No. 501-65, "Purification Filter & Purification Demineralizer Filter," Pall Trinity Micro P/Ns 5EHD10703-014-EC-48 & 5EHD10703-034-EC-48
- 5) Pall Trinity Design Report No. 501-66, "Component Cooling Water Filter," Pall Trinity Micro P/N 5EHD10703-015RT48, April 25, 1975
- 6) Pall Trinity Design Report No. 501-68, "Waste Gas Filter," Pall Trinity Micro P/N 5EHD11403-079HC64, May 5, 1975
- 7) Pall Trinity Design Report No. 501-69, "Spent Fuel Coolant Filter," Pall Trinity Micro P/N 5EHD10703-019EE64, June 2, 1975
- 8) Pall Trinity Design Report No. 501-135, "Prefilter," Pall Trinity Micro P/N 5EHD11202-125SU48, June 21, 1977
- 9) Pall Trinity Design Report No. 501-136, "After Filter," Pall Trinity Micro P/N 5EHD10703-126EC48, June 21, 1977

TABLE 3

PALL TRINITY FILTER INSPECTION RESULTS

<u>UNID NO.</u>	<u>DESCRIPTION</u>	<u>INSPECTION/EVALUATION RESULTS</u>
1NV-MFLT-009	SEAL INJECTION	As-Built welds are acceptable.
1NV-MFLT-010	SEAL INJECTION	As-Built welds are acceptable.
1NV-MFLT-011	PURIFICATION	As-Built Vessel-to-Leg welds are undersized.
1NV-MFLT-012	PURIFICATION	As-Built Vessel-to-Leg welds are undersized.
1NV-MFLT-013	PURIF./DEMIN.	As-Built Vessel-to-Leg welds are undersized.
1KC-MFLT-008A	COMPONENT COOL.	As-Built Vessel-to-Leg welds are undersized.
1KC-MFLT-009B	COMPONENT COOL.	As-Built Vessel-to-Leg welds are undersized.
1NM-MFLT-025	SPENT FUEL	As-Built Vessel-to-Leg welds are undersized.
1NM-MFLT-026	SPENT FUEL	As-Built Vessel-to-Leg welds are undersized.
1NM-MFLT-029	SF SKIMMER	As-Built welds are acceptable.
1RJ-MFLT-316A	AIR PRE-FILTER	As-Built welds are acceptable.
1RJ-MFLT-318A	AFTER FILTER	As-Built Vessel-to-Leg welds are unacceptable ¹ .
1RJ-MFLT-319B	AIR PRE-FILTER	As-Built Vessel-to-Leg welds are undersized.
1RJ-MFLT-321B	AFTER FILTER	As-Built Vessel-to-Leg welds are unacceptable ¹ .
0NB-MFLT-639	BORIC ACID	As-Built welds are acceptable.
0NB-MFLT-640	BORIC ACID	As-Built welds are acceptable.
0WG-MFLT-007	WASTE GAS	Both the As-Built Vessel-to-Leg welds and the Leg-to-Baseplate welds are undersized.

¹The Leg-to-Vessel junction is not sufficiently flush resulting in a gap between the two weld surfaces and the welds at this location were judged to be unacceptable.

ENCLOSURE 2

**BELLEFONTE NUCLEAR PLANT (BLN) - UNITS 1 AND 2
BLRD-50-438/93-10 AND BLRD-50-439/93-10**

COMMITMENTS

- Corrective actions for Unit 1 and Common will be completed one year before fuel load for Unit 1.
- Corrective actions to resolve the deficiencies of undersized support welds on Pall Trinity micro filters for Unit 2 will be completed one year before fuel load for Unit 2.