FENOC
FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
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February 14, 2011
L-11-001

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT:
Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Containment Liner Random and Non-Random Examinations Report

In accordance with an updated commitment described by the FirstEnergy Nuclear Operating Company (FENOC) in correspondence dated September 14, 2009 and confirmed by the Nuclear Regulatory Commission in NUREG-1929, Appendix A, enclosed is the Containment Liner Random and Non-Random Examinations Report for the Beaver Valley Power Station, Unit No. 1 fall 2010 refueling outage.

There are no regulatory commitments contained in this letter. If there are questions or if additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at (330) 761-6071.

Sincerely,

Paul A. Harden

Enclosure:
1R20 Containment Liner Random and Non-Random Examinations Report

cc: NRC Region I Administrator
NRC Resident Inspector
NRR Project Manager
Director BRP/DEP
Site BRP/DEP Representative

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NRR

BEAVER VALLEY POWER STATION UNIT 1

1R20 Containment Liner Random and Non-Random Examinations Report

Issue date: 2-10-2011

Prepared by: _____ Date: 2-10-2011

Reviewed by: _____ Date: 2-10-2011
FENOC UT Level III

Reviewed by: _____ Date: 2-10-2011
Supervisor, Nuclear Programs

Approved by: _____ Date: 2-10-11
Manager, Technical Services Engineering

1R20 CONTAINMENT LINER RANDOM AND NON-RANDOM EXAMINATIONS REPORT

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EXAMINATION SUMMARY

Supplemental volumetric examinations were performed on the Beaver Valley Power Station, Unit No. 1 (BVPS-1) containment liner prior to and during the twentieth refueling outage fall 2010 (1R20) to satisfy BVPS-1 license commitments 32 (random) and 33 (non-random). A summary of the commitments are as follows:

License Commitment 32:
Supplemental volumetric examinations will be performed on the BVPS-1 containment liner prior to the period of extended operation. A minimum of 75 randomly selected (as described in First Energy Nuclear Operating Company Letter L-09-205) locations will be examined (as described in FENOC Letter L-09-243). If degradation is identified, it will be addressed through the corrective action program (as described in FENOC Letter L-09-243).

If degradation (greater than 10 percent of the nominal thickness not attributable to fabrication/erection practices) is identified in the random samples examined using ultrasonic testing (UT), UT examinations shall be performed on additional random samples, to ensure a 95 percent confidence that 95 percent of the unexamined accessible containment liner is not degraded. If additional degradation is identified, the sample size for the UT examinations shall be further expanded until the statistical sampling has achieved the 95 percent confidence goal described previously. All areas with degradation shall be reexamined over at least the next three successive inspection periods to ensure that progression of the degradation is not occurring.

The initial BVPS-1 sample lot of a minimum of 75 random ultrasonic examinations will be completed in the next three refueling outages, beginning with the BVPS-1 refueling outage in 2010. The entire sample plan (including additional examinations, if required) will be completed by January 29, 2016.

License Commitment 33:
Supplemental volumetric examinations will be performed on the BVPS-1 containment liner. A minimum of 8 non-randomly selected locations will be examined, focusing on areas most likely to experience degradation based on past operating experience (as described in FENOC Letter L-09-242). If degradation is identified, it will be addressed through the corrective action program.

If degradation (greater than 10 percent of the nominal thickness not attributable to fabrication/erection practices) is identified in the non-random areas examined using ultrasonic testing (UT), UT examinations shall be performed at additional non-random areas, to be selected based on this operating experience. Should additional degradation be identified, additional non-random areas shall be UT examined until no further degradation (greater than 10 percent of the nominal thickness) is identified. All areas with degradation shall be reexamined over at least the next three successive inspection periods to ensure that progression of the degradation is not occurring.

Examinations will commence on-line, prior to the beginning of the BVPS-1 refueling outage in 2010. Non-Random examinations will be completed by December 31, 2010.

Summary of Random Scope Examinations:
Thirty-eight of the 75 randomly selected examinations were performed during the BVPS-1 1R20 refueling outage.

Acceptance criterion for the examinations had been established as 90 percent (less than 10 percent degradation) of the nominal wall thickness (that is, 0.337 inches for the shell and 0.450 inches for the dome). Appendix I contains the 1R20 random examinations results. All 38 locations examined during 1R20 were completed with no evidence of loss of material.

Summary of Non-Random Scope Examinations:
Eight non-random locations were performed during the BVPS-1 1R20 refueling outage. Two non-random examinations were completed prior to the outage, in May 2010. The locations selected included irregular contours of the liner, repainted areas of the liner, areas adjacent to the discovered through-wall hole, the below-grade area between elevations 725 feet and 735 feet, and the area below the 2006 steam generator replacement opening. Acceptance criterion for the examinations had been established as 90 percent of the nominal wall thickness (0.337 inches). Appendix II contains the 1R20 non-random examination results. All 10 locations examined online and during 1R20 were completed with no evidence of loss of material.

APPENDIX I
1R20 COMPELETED RANDOM EXAMS

FirstEnergy Nuclear Operating Company, 76 South Main St., Akron, OH 44308
Beaver Valley Power Station Unit 1, Route 168, Shippingport, PA 15077
Commerical Service Date: 9/30/1976

Component ID	Report No.	Lowest	Highest	General
1RN-020	UT-10-1063	0.516	0.555	0.532
1RN-025	UT-10-1067	0.516	0.551	0.532
1RN-026	UT-10-1058	0.527	0.558	0.539
1RN-029	UT-10-1047	0.371	0.405	0.390
1RN-030	UT-10-1065	0.403	0.420	0.412
1RN-031	UT-10-1060	0.399	0.437	0.409
1RN-034	UT-10-1069	0.382	0.438	0.402
1RN-036	UT-10-1059	0.389	0.412	0.401
1RN-037	UT-10-1070	0.382	0.419	0.399
1RN-039	UT-10-1072	0.402	0.425	0.411
1RN-040	UT-10-1052	0.405	0.428	0.416
1RN-041	UT-10-1053	0.400	0.421	0.410
1RN-042	UT-10-1032	0.401	0.425	0.413
1RN-047	UT-10-1064	0.403	0.420	0.412
1RN-048	UT-10-1066	0.412	0.422	0.416
1RN-050	UT-10-1015	0.379	0.450	0.410
1RN-052	UT-10-1012	0.392	0.420	0.400
1RN-053	UT-10-1031	0.403	0.415	0.409
1RN-054	UT-10-1033	0.396	0.413	0.405
1RN-055	UT-10-1029	0.386	0.398	0.392
1RN-056	UT-10-1027	0.403	0.415	0.409
1RN-057	UT-10-1016	0.406	0.445	0.415
1RN-058	UT-10-1030	0.376	0.394	0.385
1RN-059	UT-10-1028	0.399	0.419	0.410
1RN-060	UT-10-1017	0.357	0.415	0.390
1RN-062	UT-10-1054	0.404	0.425	0.414
1RN-063	UT-10-1026	0.401	0.414	0.407
1RN-064	UT-10-1025	0.394	0.425	0.412
1RN-065	UT-10-1008	0.396	0.424	0.412
1RN-067	UT-10-1024	0.410	0.425	0.417
1RN-068	UT-10-1055	0.387	0.407	0.397
1RN-069	UT-10-1009	0.362	0.435	0.405
1RN-070	UT-10-1011	0.416	0.444	0.432
1RN-071	UT-10-1013	0.401	0.424	0.410
1RN-072	UT-10-1014	0.387	0.402	0.394

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FirstEnergy Nuclear Operating Company, 76 South Main St., Akron, OH 44308
Beaver Valley Power Station Unit 1, Route 168, Shippingport, PA 15077
Commerical Service Date: 9/30/1976

Component ID	Report No.	Lowest	Highest	General
1RN-073	UT-10-1018	0.363	0.420	0.390
1RN-074	UT-10-1019	0.396	0.460	0.380
1RN-075	UT-10-1010	0.378	0.460	0.425

APPENDIX II
COMPELETED NON-RANDOM EXAMS

FirstEnergy Nuclear Operating Company, 76 South Main St., Akron, OH 44308
Beaver Valley Power Station Unit 1, Route 168, Shippingport, PA 15077
Commerical Service Date: 9/30/1976

Component ID	Report No.	Lowest	Highest	General	Type
1NR-01	UT-10-1020	0.383	0.420	0.400	Irregular contour
1NR-02	UT-10-1021	0.391	0.430	0.410	Irregular contour
1NR-03	UT-10-1002	0.421	0.455	0.435	Repainted
1NR-04	UT-10-1001	0.406	0.435	0.412	Repainted
1NR-05	UT-10-1022	1.020	1.110	1.075	Repainted
1NR-06	UT-10-1048	0.391	0.420	0.405	Near thru-wall
1NR-07	UT-10-1056	0.402	0.411	0.405	Near thru-wall
1NR-08	UT-10-1023	0.413	0.445	0.425	725-735 coating
1NR-09	UT-10-1057	0.415	0.429	0.421	Below S/G opening
1NR-10	UT-10-1051	0.404	0.433	0.421	Below S/G opening