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L-12-204

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 license renewal commitment 34 described by FirstEnergy Nuclear Operating Company (FENOC) in correspondence dated September 14, 2009 and confirmed by the Nuclear Regulatory Commission (NRC) 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 (BVPS-1) spring 2012 refueling outage (1R21).

By letter dated February 14, 2011, FENOC submitted the Containment Liner Random and Non-Random Examinations Report for the BVPS-1 fall 2010 refueling outage (1R20). Random and non-random containment liner examination activities performed during 1R20 and 1R21 that are associated with BVPS-1 license renewal commitments 32 and 33 listed in NUREG-1929 have been satisfactorily completed and documented in correspondence to the NRC. Therefore, license renewal commitments 32, 33, and 34 are considered closed.

There are no regulatory commitments contained in this letter. If there are any questions or if additional information is required, please contact Mr. Phil H. Lashley, Supervisor – Fleet Licensing, at 330-315-6808.

Sincerely,



Paul A. Harden

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Enclosure:  
1R21 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

Enclosure  
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1R21 Containment Liner Random and Non-Random Examinations Report  
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1R21 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 twenty-first refueling outage (1R21) in the spring of 2012 to satisfy BVPS-1 license commitment 32. This commitment is listed in BVPS-1 Updated Final Safety Analysis Report Table 16-1. The non-random examinations that satisfied license renewal commitment 33 were performed during the twentieth refueling outage (1R20) in the fall of 2010. A summary of the commitment is 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 seventy-five 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.

### **Summary of Random Scope Examinations:**

Thirty-seven of the seventy-five randomly selected examinations were examined during the BVPS-1 1R21 refueling outage as part of the sample plan and were completed with no evidence of loss of material. Thirty-eight random examinations were previously completed during 1R20 with no evidence of loss of material. Based on the 1R20 and 1R21 random examination results, a 95 percent confidence has been achieved that 95 percent of the unexamined accessible containment liner is not degraded. Since there was no evidence of degradation, no additional sampling or successive re-examinations were required.

The acceptance criterion for the examinations had been established as 90 percent of the nominal wall thickness (that is, 0.337 inches for the vertical shell and 0.450 inches for the dome). Appendix I contains the 1R21 random examinations results.

**Previously Completed Examinations:**

Eight examinations at non-random locations were performed during 1R20. Two examinations at non-random locations 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 is 90 percent of the nominal wall thickness (0.337 inches). All 10 locations examined online and during 1R20 were completed with no evidence of loss of material. Since there was no evidence of degradation, no additional sampling or successive re-examinations were required.

APPENDIX I  
1R21 COMPELETED RANDOM EXAMS

Component ID	Report No.	Lowest	Highest	General	Acceptance Criteria
1RN-01	UT-12-1117	0.541"	0.554"	0.546"	0.450"
1RN-02	UT-12-1093	0.512"	0.528"	0.528"	0.450"
1RN-03	UT-12-1094	0.548"	0.558"	0.551"	0.450"
1RN-04	UT-12-1115	0.495"	0.516"	0.508"	0.450"
1RN-05	UT-12-1116	0.480"	0.516"	0.504"	0.450"
1RN-06	UT-12-1092	0.513"	0.524"	0.518"	0.450"
1RN-07	UT-12-1114	0.507"	0.517"	0.512"	0.450"
1RN-08	UT-12-1113	0.500"	0.519"	0.513"	0.450"
1RN-09	UT-12-1112	0.501"	0.518"	0.507"	0.450"
1RN-10	UT-12-1069	0.504"	0.532"	0.515"	0.450"
1RN-11	UT-12-1076	0.502"	0.524"	0.511"	0.450"
1RN-12	UT-12-1070	0.499"	0.526"	0.505"	0.450"
1RN-13	UT-12-1077	0.535"	0.592"	0.575"	0.450"
1RN-14	UT-12-1096	0.501"	0.514"	0.505"	0.450"
1RN-15	UT-12-1095	0.547"	0.568"	0.559"	0.450"
1RN-16	UT-12-1078	0.521"	0.548"	0.540"	0.450"
1RN-17	UT-12-1079	0.531"	0.553"	0.547"	0.450"
1RN-18	UT-12-1080	0.532"	0.548"	0.538"	0.450"
1RN-19	UT-12-1081	0.535"	0.548"	0.541"	0.450"
1RN-21	UT-12-1075	0.531"	0.551"	0.538"	0.450"
1RN-22	UT-12-1072	0.519"	0.551"	0.532"	0.450"
1RN-23	UT-12-1071	0.525"	0.552"	0.530"	0.450"
1RN-24	UT-12-1065	0.514"	0.537"	0.520"	0.450"
1RN-27	UT-12-1099	0.522"	0.548"	0.530"	0.450"
1RN-28	UT-12-1100	0.488"	0.514"	0.495"	0.450"
1RN-32	UT-12-1087	0.378"	0.399"	0.388"	0.337"
1RN-33	UT-12-1088	0.397"	0.443"	0.414"	0.337"
1RN-35	UT-12-1091	0.397"	0.428"	0.415"	0.337"
1RN-38	UT-12-1067	0.392"	0.412"	0.404"	0.337"
1RN-43	UT-12-1023	0.355"	0.426"	0.409"	0.337"
1RN-44	UT-12-1084	0.390"	0.431"	0.411"	0.337"
1RN-45	UT-12-1063	0.391"	0.451"	0.420"	0.337"
1RN-46	UT-12-1064	0.402"	0.415"	0.410"	0.337"
1RN-49	UT-12-1066	0.421"	0.426"	0.424"	0.337"
1RN-51	UT-12-1083	0.401"	0.435"	0.417"	0.337"
1RN-61	UT-12-1001	0.418"	0.445"	0.428"	0.337"
1RN-66	UT-12-1082	0.409"	0.430"	0.418"	0.337"