



Dresden Nuclear Power Station  
6500 North Dresden Road  
Morris, IL 60450

February 12, 2017

SVPLTR: #18-0006

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

Dresden Nuclear Power Station, Unit 2  
Facility Operating License No. DPR-19  
NRC Docket No. 50-237

Subject: Owner's Activity Report Submittal;  
Fifth 10-Year Interval 2017 Refueling Outage Activities

This letter submits the Owner's Activity Report (i.e., Form OAR-1) and In-vessel Visual Inspection (IVVI) Report for the Dresden Nuclear Power Station (DNPS) Unit 2 refueling outage (D2R25) which began on October 30, 2017, and was completed on November 18, 2017. This is the first refueling outage conducted in the second inspection period of the fifth 10-year inservice inspection interval for DNPS Unit 2. A copy of the Owner's Activity Report and IVVI Report are provided as attachments to this letter.

This Owner's Activity Report is submitted in accordance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Case N-532-4, "Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission," and USNRC Safety Evaluation In Support of Request for Relief Associated With the Fifth 10-Year Inservice Inspection Interval Program dated September 30, 2013. Code Case N-532-4 requires an Owner's Activity Report Form OAR-1 to be prepared and certified upon completion of each refueling outage. In accordance with the conditions of Code Case N-532-4, this OAR-1 form is being submitted within ninety days of the completion of the refueling outage.

The IVVI results are provided to report vessel internal inspections and to support B-N-1 and B-N-2 relief request exam completion.

Respectfully,

A handwritten signature in black ink, appearing to read "Peter J. Karaba".

Peter J. Karaba  
Site Vice President  
Dresden Nuclear Power Station

Enclosures

A047  
NRR

**FORM OAR-1 OWNER'S ACTIVITY REPORT**

Report Number Refueling Outage D2R25 OAR-1

Plant Dresden Nuclear Power Station, 6500 N. Dresden Road, Morris, IL 60450

Unit No. 2 Commercial Service Date 6/9/70 Refueling Outage Number D2R25  
(if applicable)

Current Inspection Interval 5<sup>th</sup> Inspection Interval  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, other)

Current Inspection Period 2<sup>nd</sup> Inspection Period  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)

Edition and Addenda of Section XI applicable to the Inspection Plans 2007 Edition with 2008 Addenda

Date / Revision of Inspection Plans 10/31/16/Revision 3

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans N/A

Code Cases used: N-649, N-653-1, N-586-1

**CERTIFICATE OF CONFORMANCE**

I certify that (a) the statements made in this report are correct; (b) the examinations and tests, meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of D2R25 conform to the requirements of Section XI (refueling outage number)

Signed John N. Kesh, ISI Coordinator Date 2/13/18  
(Owner or Owner's designee. Title)

**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Illinois and employed by The Hartford Steam Boiler Inspection and Insurance Company of Hartford, Connecticut

have inspected the items described in this Owner's Activity Report, and state that to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI

By signing this certificate neither the Inspector nor his employer makes any warranty expressed or implied concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection

[Signature] Commissions IL 1546; NB10972 A, N, I  
(Inspector's Signature) National Board, State, Province, and Endorsements

Date 2/13/18





## **Dresden Unit 2 Reactor Internals Inspection Report Refueling Outage D2R25**

The ASME Section XI inspections credited during D2R25 includes the once-per-period B-N-1 inspection of the reactor vessel interior and B-N-2 inspections of reactor vessel interior attachments. Credit is being taken for the Boiling Water Reactor Vessel and Internals Project (BWRVIP) examinations in place of the B-N-1 and B-N-2 examinations as allowed in Dresden Station Relief Request I5R-07, "Request for Relief for the Use of BWRVIP Guidelines in lieu of Specific ASME Code Requirements on Reactor Vessel Internals and Component Inspection In Accordance with 10CFR50.55a(a)(3)(i) Alternative Provides Acceptable Level of Quality and Safety".

To implement the requirements of the BWRVIP, General Electric – Hitachi (GEH) was contacted to perform the inspection activities. The following components and assemblies were examined as directed by BWRVIP documents:

- Seven core spray piping welds, two core spray piping brackets and one core spray sparger bracket in accordance with the BWRVIP-18 Revision 2-A, "BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines".
- Fourteen shroud and shroud support vertical welds in accordance with BWRVIP-76 Revision 1-A, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines".
- One shroud support horizontal weld in accordance with BWRVIP-38, "BWR Shroud Support Inspection and Flaw Evaluation Guidelines".
- Attachment welds for two core spray piping brackets and all four steam dryer support lugs in accordance with BWRVIP-48-A, "Vessel ID Attachment Weld Inspection and Flaw Evaluation Guidelines".
- Steam dryer previous indications and ten additional inspections in accordance with BWRVIP-139-A, "Steam Dryer Inspection and Flaw Evaluation Guidelines".
- Previous indications on the top guide rim weld and one aligner pin/block assembly in accordance with BWRVIP-26-A, "BWR Top Guide Inspection and Flaw Evaluation Guidelines".

The above BWRVIP examinations resulted in no indications identified in the reactor interior surface as defined by B-N-1 or the reactor interior attachments as defined by B-N-2.

## OAR-1 Summary

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Repair/ Replacement Plan No.	Work Request Number	Code Class	EPN Number	Description of Repair/Replacement	OAR-1	
					Reportable	Dbase Record
2-13-026	01623423-01	1	2-220-62A	Replace feedwater check valve disc/seat assembly with a refurbished spare as required based on inspection.	No	
2-13-030	01623421-01	1	2-220-58A	Contingency to replace existing disc/seat assembly with refurbished spare modified to add groove for o-ring or new disc/seat assembly.	No	
2-13-049	97032518-01	1	FD WTR CHK ASMB	Refurb spare feedwater checkvalve assembly SI 570A23/Catid 7860.	No	
2-13-065	01624416-01	1	2-203-2C	Replace/upgrade Unit 2 MSIV 2C internals.	No	
2-14-006	01606525-01	1	SPARE FDWTR CHK	Refurbish spare feedwater checkvalve seat assembly that was removed under WO 1509923-01.	No	
2-14-013	01608012-01	3	2-1501-2D	Replace bonnet bolting on 2-1501-2D valve if required.	No	
2-15-029	01096660-01	2	2-1302	Contingency replacement bolting on the West Channel Cover. Bolting may be replaced if lost, damaged during disassembly or to facilitate installation.	No	
2-15-035	01096660-08	2	2-1302	Re-install diaphragm seal weld on Unit 2 Isolation Condenser West End.	No	
2-15-036	01096660-11	2	2-1302	Install welded tube plugs on west side of Unit 2 Isolation Condenser based on results of Eddy-Current testing.	No	
2-15-037	01096660-12	2	2-1302	Re-install heat shield stud welds to facilitate Eddy-Current testing on Unit 2 Isolation Condenser west end tube bundle.	No	
2-15-049	01786762-01	1	SPARE FDWTR CHK	Refurbish spare feedwater check valve assembly SI 570A23. Removed under WO 1510033.	No	
2-15-053	01681225-01	1	2-3204-A-502&03	Install new test tap valves 2-3204-A-502 and 503 downstream of feedwater check valve 58A.	No	

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Repair/ Replacement Plan No.	Work Request Number	Code Class	EPN Number	Description of Repair/Replacement	OAR-1	
					Reportable	Dbase Record
2-15-054	01681225-02	1	2-3204-A-504	Install new test tap valve 2-3204-A-504.	No	
2-16-012	01827586-01	1	SPARE FDWTR CHK	Refurb spare feedwater 18 bolt to 20 bolt check valve assembly. Includes basemetal repairs.	No	
2-16-015	01917418-01	2	2-1105-A	Rebuild the spare SBLC Relief Valve that was removed from the Unit 2, 2A SBLC Train under WO 01553451-01.	No	
2-16-017	01778031-01	3	2/3-9400-102	Replace CREVS heat exchanger flange studs and nuts	No	
2-16-023	PO 568405-01	1	TRG RCKMN 223	Per form repairs to Target Rock Main S/N 223 inlet flange per NWS Traveler 16-32.	No	
2-16-024	01960327-01	1	SPARE MSIV DISC	Perform NDE on MSIV disc machined per EC 399980.	No	
2-16-025	01960327-02	1	SPARE MSIV DISC	Perform NDE on MSIV disc machined per EC 399980.	No	
2-16-026	01828211-01	MC	2-1605-18"-LX	Install new hardened vent piping per EC 400930.	No	
2-16-027	01817918-01	3	2-3930-501	Replace check valve and bolting if required. Also includes task 2 where flange bolting of heat exchanger may be required. (2-6699A/B)	No	
2-17-001	04590454-01	2/3	2-1503-B	Replace 2B LPCI heat exchanger cover bolting if lost or damaged during inspection or cleaning.	No	
2-17-002	01706139-01	2	2-1105-B	Replace Unit 2 SBLC relief valve.	No	
2-17-003	01506113-01	1	2-0203-4D	Replace 4D SRV, perform flange repairs and replace inlet bolting if required.	No	
2-17-004	01516255-01	1	2-0203-4G	Replace SRV 4G and replace inlet bolting and repair inlet flange if required.	No	
2-17-005	01704062-01	2	2-2301-53	Replace relief valve and bolting if required.	No	
2-17-006	01708617-01	2/3	2-1503-B	Replace LPCI heat exchanger cover bolting and tubing if required.	No	

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					Reportable	Dbase Record
2-17-007	01708617-03	2/3	2-1503-B	Repair area's of upper and lower LPCI heat exchanger head channel if required.	No	
2-17-008	01710614-01	1	2-0203-3D	Replace ERV 3D. Replace inlet bolting and repair inlet flange if required in task 7 and 9.	No	
2-17-009	01711170-01	1	2-0203-3B	Replace Unit 2 ERV 3B. Replace inlet bolting. Repair inlet flange if required.	No	
2-17-010	01901895-01	1	2-0203-3A	Replace Unit 2 Target Rock valve. Replace bolting and repair inlet flange if required.	No	
2-17-011	01309348-01	2	2-1402-28B	Replace relief valve and bolting if required.	No	
2-17-012	04616404-03	2	2-2301-3	Replace valve disc.	No	
2-17-016	01692876-01	2	2-1105-B	Rebuild spare SBLC relief valve	No	
2-17-017	01883544-01	2	2-1402-28A	Rebuild Core Spray relief valve that was removed under WO 1095133-01.	No	
2-17-018	01126869-01	2	2-2301-71	Replace valve disc if required.	No	
2-17-019	01901902-01	2	2-2301-45	Replace Unit 2 HPCI 45 valve and bolting if required.	No	
2-17-020	01883829-01	2	2-1501-12	Replace snubber 2-1501-12.	No	
2-17-021	01883829-02	2	2-1501-10	Replace snubber 2-1501-10.	No	
2-17-022	01883829-05	2	2-1501-15	Replace snubber 2-1501-15.	No	
2-17-023	01883829-07	2	2-1501-19	Replace snubber 2-1501-19.	No	
2-17-024	01883829-09	1	2B-202-09	Replace snubber 2B-202-09.	No	
2-17-025	01883829-12	2	2-2305-01	Replace snubber 2-2305-01.	No	
2-17-026	01883829-24	3	2-3019C-55	Replace snubber 2-3019C-55.	No	



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Repair/ Replacement Plan No.	Work Request Number	Code Class	EPN Number	Description of Repair/Replacement	OAR-1	
					Reportable	Dbase Record
2-17-027	01883829-26	1	2-1001A-38	Replace snubber 2-1001A-38.	No	
2-17-028	01883829-06	2	2-1501-04	Replace snubber 2-1501-04.	No	
2-17-029	01490368-01	2	2-1599-13D	Replace LPCI relief valve.	No	
2-17-030	01712778-01	MC	2-8526	Replace relief valve.	No	
2-17-031	01507055-01	2	2-1599-13C	Replace relief valve.	No	
2-17-032	01848791-01	3	2-1512-24"	Replace degraded Unit 2 CCSW pipe in Cribhouse.	No	
2-17-033	01848791-07	3	2-1512-24"	Repair degraded inner wall of Unit 2 CCSW piping found during non-ISI inspection.	No	
2-17-034	01848791-23	3	2-1501-36C	Replace bonnet bolting on valve if required.	No	
2-17-035	01903432-05	1	CRDM'S	This is not a Section XI flaw. This is a routine refuel outage replacement of existing control rod assemblies based on performance trending results. Existing capscrews are being replaced with each CRD assembly instead of cleaning and re-installing for ease of installation.	No	
2-17-037	01848788-01	3	2-1514-16"	Replace Unit 2 CCSW pipe 2-1514-16" in Unit 2 Torus basement.	No	
2-17-038	01882842-02	2	2-1503A	Repair area's identified in NDE report performed in Task 1. Also repair up to an additional 20" per side of existing weld based on NDE report results.	Yes	
2-17-039	01882847-02	2	2-1503B	Repair area's identified in NDE report performed in Task 1. Also repair up to an additional 20" per side of existing weld based on NDE report results.	Yes	
2-17-041	01440976-05	2	2-1402-8B	Perform weld build-up on valve disc guides.	No	

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Repair/ Replacement Plan No.	Work Request Number	Code Class	EPN Number	Description of Repair/Replacement	OAR-1	
					Reportable	Dbase Record
2-17-042	01883837-01	MC	2-2001-106	Perform PM's on valve.	No	
2-17-043	01901892-01	MC	2-2001-6	Replace diaphragm and perform PM's.	No	
2-17-044	01901899--1	MC	2-2001-5	Replace valve diaphragm and perform PM's.	No	
2-17-045	01901904-01	MC	2-2001-105	Replace valve diaphragm and perform PM's.	No	
2-17-048	01891399-04	1	U2 WST BNK HCU'S	Perform PM's on Unit 2 west bank HCU's. Includes tasks 4, 28 and 29. Involves 138 valve work and accumulator replacement. Done during D2R25.	No	
2-17-049	01891399-05	1	EST BNK HCU'S	Perform PM's on Unit 2 east bank HCU's. Includes tasks 5,6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 30 and 31. Involves 138 valve work and accumulator replacement. Perform during D2R25.	No	
2-17-050	01828210-97	MC	M-1158D-153	Remove MC support M-1158D-153 and add shims to support M-1158D-161.	No	
2-17-051	04608838-1	2	SPARE 2301-45	Rebuild spare 2301-45 check valve. Removed from Unit 3 under WO 1838183-01.	No	
2-17-052	PO 591089-L1	1	BK 7160	Perform repairs to Main Steam Safety Valve BK 7160 per CEAR 17-215.	No	
2-17-053	PO 591089-L1	1	BK 6260	Perform repairs to Main Steam Safety Valve BK 6260 per CEAR 17-217.	No	
2-17-057	01942644-01	1	2-202-A	Replace seal flange on 2A Re-Circ pump.	No	
2-17-058	04606234-01	2	2-1101-22	Perform overhaul on SBLC 2-1101-22 valve.	No	
2-17-060	1770616-01	1	2-203-1A	Replace valve disc and bonnet bolting if required.	No	
2-17-061	01508125-01	2	2-1105-B	Rebuild the spare SBLC Relief Valve.	No	

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					Reportable	Dbase Record
2-17-062	568497-N/A	1	SPARE MSIV	Replace main disc and machine the nozzle seat step to re-establish design nozzle seat step.	No	
2-17-065	04675213-04	1	2-0220-112D	Cut out and remove valves 2-0220-112D & 113D/2-0220-112C & 113C, then weld a pipe cap on the exposed sensing line.	No	
2-17-066	01608012-04	3	2-1502-2D	Repair disc guide rails if required.	No	
2-17-068	04668162-01	1	2-203-2D	Overhaul Unit 2 2D MSIV as required.	No	
2-17-069	04668162-12	1	2-203-2D	Perform in-body machining on MSIV valve to install new liner assembly.	No	
2-17-071	01883829-11	1	2-3001A-49	Replace Lisega Snubber with a new Lisega snubber	No	
2-17-072	01704664-01	1	2-0203-4E	Install valve rotate out of stock	No	
2-17-073	01706140-01	1	2-0203-4F	Change SRV	No	
2-17-074	01899866-17	1	2-0201	Repair indications in vessel head to flange weld	Yes	
2-17-075	01899874-20	1	M-1164D-296	Remove indications on attachment welds on support M-1164D-296 (IWA).	Yes	
2-17-076	04708193-01	3	M-564E-7	Perform repairs to support as identified in IR 4071021.	No	
2-17-077	04708202-01	3	M-564E--15	Perform repairs to support as identified in IR 4071014.	No	
2-17-078	01901291-01	1	2-0304-2-1/2"	Replace flange bolting	No	
2-17-079	04709815-01	1	HCU 38-35	Replace stem/plug on 126 valve.HCU 38-35	No	
2-17-080	04709814-01	1	HCU 46-47	Replace stem/plug on HCU 46-47 126 valve.	No	
2-17-081	04709813-01	1	HCU 14-27	Replace HCU 126 valve stem/plug.	No	

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Repair/ Replacement Plan No.	Work Request Number	Code Class	EPN Number	Description of Repair/Replacement	OAR-1	
					Reportable	Dbase Record
2-17-082	04709411-01	1	JP N20A-6	Perform weld overlay on jet pump nozzle weld N20A-6. VT-2 not required per company position paper. Revision 1 added for Discontinuity Removal Method.	No	
2-17-083	04710868-01	1	2-305-54-39-127	Replace stem\disc if required	No	
2-17-085	1883829-28	2	2-1522-24	Replace snubber 2-1522-24.	No	
3-14-028	01674590-01	3	3-5700-30D	Replace standpipes on CCSW Room Cooler 3-5700-30D. Replace flange bolting if required.	No	
3-15-014	01674590-19	3	3C CCSW PM CLR	Install TMOD per EC 398257 on 3C CCSW pump vault cooler.	No	
3-16-025	95046273-24	1	SPARE MSIV DISC	Perform NDE on MSIV disc modified per EC 399980.	No	
3-16-063	00690402-02	3	3-3903	Replace Unit 3 DGCW pump and motor if required.	No	
3-17-002	01828114-01	3	2/3-3930-501	Replace check valve and bolting if required.	No	
3-17-003	01828114-09	3	2/3-6669A/B	Replace or repair diesel generator cooling water piping as required.	No	
3-17-011	04657318-01	3	3-1503B	Replace LPCI heat exchanger cover bolting if lost or damaged during inspection and cleaning.	No	
3-17-012	04683812-01	2		Replace 1 1/2" pipe tee on SBLC line 3-1102A-1 1/2"-A. Pipe tee between squib valve and 3-1101-2A.	No	