

Richard D. Bologna Site Vice President Beaver Valley Power Station P.O. Box 4 Shippingport, PA 15077

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September 26, 2018 L-18-229

10 CFR 50.73

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

SUBJECT: Beaver Valley Power Station, Unit No. 2 BV-2 Docket No. 50-412, License No. NPF-73 LER 2018-001-00

Enclosed is Licensee Event Report (LER) 2018-001-00, "Technical Specification Required Shutdown due to Loss of the 2P 480 Volt Emergency Bus". This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(A) and 10 CFR 50.73(a)(2)(i)(B).

There are no regulatory commitments contained in this submittal. Any actions discussed in this document that represent intended or planned actions are described for the NRC's information, and are not regulatory commitments.

If there are any questions or if additional information is required, please contact Mr. Brian D. Kremer, Manager, Regulatory Compliance, at 724-682-4284.

Sincerely,

Richard D. Bologna Site Vice President

Enclosure – Unit 2 LER 2018-001-00

cc: Mr. D. C. Lew, NRC Region I Administrator
 Mr. J. A. Krafty, NRC Senior Resident Inspector
 Ms. J. Tobin, NRC Project Manager
 INPO Records Center (via INPO Consolidated Event System)
 Mr. L. Winker (BRP/DEP)

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Enclosure L-18-229

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Unit 2 LER 2018-001-00

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Technical Specification Required Shutdown due to Loss of 2P 480 Volt Emergency Bus

NRC FORM 366 (04-2018)					U.S	U.S. NUCLEAR REGULATORY COMMISSION APPROVED BY OMB: NO. 3150-0104 EXPIRES: Estimated burden per response to comply with this mandatory collector Reported lessons learned are incorporated into the licensing proces							RES: 03/3 ollection requ	8 1/2020 lest 80 hours d fed back to				
(See Page 2 for required n (See NUREG-1022, R.3 for instr http://www.nrc.gov/reading-ri				VENT REPORT (LER) number of digits/characters for each block) truction and guidance for completing this form rm/doc-collections/nuregs/staff/sr1022/r3/)					industry. Send o 2 F43), U.S. Nu Infocollects.Res Regulatory Aff Washington, Du display a currer person is not re	industry. Send comments regarding burden estimate to the Information Services Bra 2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e- Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and F Washington, DC 20503. If a means used to impose an information collection dc display a currently valid OMB control number, the NRC may not conduct or sponsor person is not required to respond to, the information collection.								
1. Faci	lity Na	ne								2. Doc	ket Nu	ımber		3. Page				
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4. Title)									I					_			
Techi	nical S	pecifica	tion Requ	ired Sh	nutdowr	n due to	o Loss	of 2P	480 V	/olt En	nerger	ncy Bus						
5.	Event	Date		6. LER N	umber		7.	Report	Date			8.	Other	Facilitie	s involve	d		
Month	Day	Year	Year	Sequ Nun	ential nber	Rev No.	Month	Day	Year	Year N/A				Docket Nur 05000	nber	_		
8	12	2018	2018-	00	1 -	00				Faci N/A	lity Name	ame			Docket Number 05000			
9. O	perating	g Mode		11	. This R	eport is	Submit	ted Pur	suant t	to the R	lequire	ments of 10 C	CFR §	(Check	all that a	pply)		
			20.220	1(b)		20	D.2203(a))(3)(i)]	50.73(a)(2)(ii)(A)][50.73(a	a)(2)(vi	ii)(A)	
	1		20.220	20	20.2203(a)(3)(ii)] [50.73(a)(2)(ii)(B)				50.73(a)(2)(viii)(B)					
	I		20.220	20	20.2203(a)(4)			[50.73(a)(2)(iii)				50.73(a)(2)(ix)(A)					
			20.2203(a)(2)(i)				D.36(c)(1))(i)(A)		[50.73(a)(2)(iv)(A)				50.73(a)(2)(x)			
10.	Power	Level	20.220	3(a)(2)(ii)	50.36(c)(1)(ii)(A)				[50.73(a)(2)(v)(A)			73.71(a)(4)					
			20.220	3(a)(2)(iii)		50	0.36(c)(2))]	50.7	73(a)(2)(v)(B)		[73.71(a	a)(5)		
			20.2203(a)(2)(iv) 50.				50.46(a)(3)(ii)			50.73(a)(2)(v)(C)			73.77(a)(1)					
	100		20.2203(a)(2)(v)				了 50.73(a)(2)(i)(A)			[50.73(a)(2)(v)(D)			73.77(a)(2)(i)				
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	<u>.</u>						12. Lic	ensee (Contact	t for thi	s LER		<u> </u>	<u> </u>				
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				13. C	omplete	One Lir	ne for ea	ach Co	mpone	nt Failu	re Des	cribed in this	Repo	ort			_	
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		14.	Suppleme	ntal Rep	ort Expe	cted	ited			45	15 Expected Submission Date			L	Month	Ĩ	Day	Year
Ye	s (If yes	, complete '	15. Expected	Submissio	n Date)	٧No			15. Expected Submission Date				le					
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NRC FORM 366 (04-2018)

LICENSEE EVENT REPORT (LER) (Continued)

REQUIRED NUMBER OF DIGITS/CHARACTERS FOR EACH BLOCK

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BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 120 / 2 LINES	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 230 / 2 LINES	TITLE
5	8 TOTAL 2 FOR MONTH 2 FOR DAY 4 FOR YEAR	EVENT DATE
6	9 TOTAL 4 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISIONS NUMBER	LER NUMBER
7	8 TOTAL 2 FOR MONTH 2 FOR DAY 4 FOR YEAR	REPORT DATE
8	UP TO 37 FACILITY NAME 8 TOTAL DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	VARIES CHECK ALL BOXES THAT APPLY	REQUIREMENTS OF 10 CFR
12	UP TO 100 FOR NAME 10 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES (UP TO 10) 2 FOR SYSTEM (UP TO 10) 4 FOR COMPONENT (UP TO 10) 4 FOR MANUFACTURER (UP TO 10) ICES VARIES (UP TO 10)	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	8 TOTAL 2 FOR MONTH 2 FOR DAY 4 FOR YEAR	EXPECTED SUBMISSION DATE
16	1400 OR 14 LINES OF TYPING	ABSTRACT

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NRC FORM	366A
(04-2018)	

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104

EXPIRES: 03/31/2020

NUCLEAR REQUERA
DZ

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the informationcollection.

(See NUREG-1022, R.3 for instruction and guidance for completing this form <u>http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)</u>

1. FACILITY NAME	2. DOCKET NUMBER			3. LER NUMBER					
	05000-			[YEAR	SEQUENTIAL NUMBER			REV NO.
Beaver Valley Power Station, Unit 2	0000-		412		2018	-	001	-	00

NARRATIVE

Energy Industry Identification System (EIIS) Codes identified in the text as [XX]

CONDITIONS PRIOR TO OCCURRENCE:

Beaver Valley Power Station, Unit 2 was in Mode 1 at 100 percent power.

There were no Structures, Systems or Components (SSCs) that were inoperable at the start of the event that contributed to the event.

DESCRIPTION OF EVENT:

At 0158 on August 12, 2018 Beaver Valley Power Station (BVPS) Unit 2 experienced a loss of the 2P 480 Volt Emergency Bus [BU]. The loss of the bus was due to a failed over current relay [50] on the "C" phase of the incoming power supply. Due to the loss of the 2P bus the "B" train Emergency Diesel Generator [DG] and the Residual Heat Release Valve [RV] were declared inoperable. Per operating procedures this was considered a Loss of Safety Function. Operating Manual 1/2OM-48.1.I, Technical Specification Compliance, states that a condition in which any of the three Steam Generator Atmospheric Steam Dump Valves [RV] or the Residual Heat Release Valve is inoperable concurrent with an Emergency Diesel Generator constitutes a loss of safety function as the steam generator tube rupture analysis would not be met.

The same procedure states that if a loss of safety function is determined to exist, the shutdown actions of Technical Specification (TS) Limiting Condition of Operation (LCO) 3.0.3 shall be performed. This event was initially reported (EN 53548) as an initiation of a plant shutdown required by the plant's Technical Specifications, 10 CFR 50.72(b)(2)(i), Loss of Safety Function 10 CFR 50.72 (b)(3)(v)(B) & (D) and an Unanalyzed Condition 10 CFR 50.72(b)(3)(ii)(B). A subsequent engineering evaluation determined that a loss of safety function did not exist during this event. This has been entered in the Corrective Action Program. A revised Event Notification was made at 1424 on August 16, 2018 retracting the Loss of Safety Function and Unanalyzed Condition event classifications.

At 0358 on August 12, 2018, TS 3.8.4, DC Sources-Operating, Condition D was entered due to the inoperability of the "B" train battery chargers [BYC]. This required a plant shutdown to Mode 3 in 6 hours and Mode 5 in 36 hours if not corrected. A reactor [RCT] shutdown was commenced at 0410. Unit 2 entered Mode 3 at 0843. The "A" train source range nuclear instrument [DET] did not respond due to a failed detector. Unit 2 entered Mode 4 at 1445. At 1824, the affected relay had been replaced. The 2P Emergency bus was tested and returned to service by 2011. At 0212 on August 13, 2018 the normal battery chargers were placed in service to restore the batteries to their required parameters. It was determined that the complete charging of the batteries would take longer than the allowed TS completion time of 36 hours to be in Mode 5. At 1130 on August 13, a Notice of Enforcement Discretion (NOED) to allow Unit 2 to remain in Mode 4 for an additional 18 hours was requested. At 1203, the NOED was verbally granted. The "B" train of batteries were restored to operable status by 2253 on August 13, and the NOED was terminated. This was just under 7 hours into the extension period granted by the NRC per NEOD 18-1-01. The "A" train source range nuclear instrument was restored to Operable at 2040 on August 14, 2018.

CAUSE OF EVENT:

It has been determined through troubleshooting that the BV-50-VF211C, "C" phase over current protection relay had failed. Testing has concluded that this failure was caused by the failure of 1N4744 15V Zener diode located in the power supply circuit of this relay.

NRC FORM 366A U.S. NUCLEAR REGULA	ATORY COMN	APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020							
(See NUREG-1022, R,3 for instruction and guidance for	Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information								
http://www.nrc.gov/reading-rm/doc-collections/nurec	gs/staff/sr1022	:3/). collection does not display a currently valid UMB control number, the NRC sponsor, and a person is not required to respond to, the information collection.					duct on		
1. FACILITY NAME	<u> </u>	2. DOCK		3. LER NUMBER					
Beaver Valley Power Station, Unit 2	05000-		412	2018	SEQUENTIAL NUMBER	- 00	≣V o 0		
NARRATIVE				<u> </u>		<u> </u>			
ANALYSIS OF EVENT: The plant risk associated with the BVPS Uni based on the change in core damage freque large early release frequency derived using exposure time. This event is being reported pursuant to 10 Technical Specification 3.8.4, DC Sources-C in 36 hours if one or two batteries on one tra This event is also being reported pursuant to Specification. A NOED was requested and additional 18 hours beyond the required con	it 2 loss of 2 ency derived conditional CFR 50.73(Dperating, C ain are not re o 10 CFR 50 granted by f npletion time	2P 480 \ d using t large ea a)(2)(i)(condition estored 0.73(a)(the NRC e.	/olt Emergency Bus is c the conditional core dam arly release probability fo h D requires a shutdown to Operable in 2 hours. 2)(i)(B), Operation or Co C on August 13, 2018 to	onsidered hage prob or the obs uired by to Mode ondition P allow Un	d to be very low bability, and the served condition Technical Spec 3 in 6 hours ar Prohibited by Te it 2 to stay in M	/. This is change 1 and :ification. 1d Mode echnical lode 4 ai	; ; in ; 5 .n		
 CORRECTIVE ACTIONS: 1) Relay BV-50-VF211C, series 238, was r 2) We will assess the series 238 relay Prevulnerability. 	replaced wit	th a new aintenar	v series 468 relay. nce strategy and evaluat	te its desi	ign to mitigate f	ailure			
3) Operating Procedure 1/2OM-48.1.I will be revised to clarify wording regarding a "Loss of Safety Function" as it applies to the operability of the Unit 2 atmospheric steam dump valves and their corresponding power supplies.									
PREVIOUS SIMILAR EVENTS:									
A review of the previous three years identifie	d no similar	[•] events	have occurred.						
				(CR 2018-07138 CR 2018-07251	ł			

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