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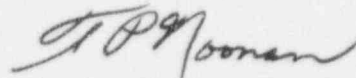
November 4, 1996  
NPD1VPO:0541

*Beaver Valley Power Station, Unit No. 1*  
*Docket No. 50-334 Licensee No. DPR-66*  
*LER-96-012-00*

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

In accordance with Appendix A, Beaver Valley Technical Specifications, the following Licensee Event Report is submitted:

LER 96-012-00, 10 CFR 50.73(a)(2)(i), "Entry into Technical Specification 3.0.3 Due to Isolation of Control Room Emergency Breathing Air Pressurization System."

  
T. P. Noonan

LB/ds

Attachment

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November 4, 1996

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## LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Beaver Valley Power Station Unit 1

DOCKET NUMBER (2)

05000334

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TITLE

Entry into Technical Specification 3.0.3 Due to Isolation of Control Room Emergency Breathing Air Pressurization System

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	06	96	96	012	00	11	04	96	Beaver Valley Power Station Unit 2	05000412
OPERATING MODE (9)			20.402(b)			20.405(c)			50.73(a)(2)(iv)	
POWER LEVEL (10)			20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)	
100%			20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)	
			20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)	
			20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)	
			20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(x)	

OTHER  
(Specify in abstract below and in Text  
NRC Form 366A)

## LICENSEE CONTACT FOR THIS LER (12)

NAME

T. P. Noonan, Vice President Nuclear Operations and Plant Manager

TELEPHONE NUMBER (include Area Code)

(412) 393-7622

## COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

## SUPPLEMENTAL REPORT EXPECTED (14)

YES (if yes, complete EXPECTED SUBMISSION DATE)	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limited to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On October 6, 1996, at approximately 1502 hours, the Unit 1 Control Room Emergency Breathing Air Pressurization System (CREBAPS) was inadvertently isolated, a condition prohibited by Technical Specifications (TS). The CREBAPS, although controlled by Unit 1, is common to Units 1 and 2. At approximately 1459 hours, with Unit 1 in Mode 1 at 100% power and Unit 2 in Mode 5 at 0% power, during trip testing of a Unit 2 motor control center (MCC) feeder breaker, an inadvertent CREBAPS actuation was initiated. A radiation monitor, powered from the affected MCC, caused the CREBAPS actuation signal during test restoration. Upon verification that a valid actuation signal did not exist, both units entered the procedure to reset the actuation and stop the discharge of the CREBAPS air banks. At 1502 hours, due to a communications error, a Nuclear Control Operator (NCO) isolated the CREBAPS air banks, a condition prohibited by Technical Specifications (TS) and TS 3.0.3 was entered. The air banks did not need to be isolated, since the pressure met TS requirements. The CREBAPS actuation signal was reset at 1503 hours. At 1506 hours, the CREBAPS air banks were unisolated, the system was returned to the normal configuration and TS 3.0.3 was exited. This event is being reported pursuant to the requirements of 10CFR50.73(a)(2)(i)(B) as "Any operation or condition prohibited by the plant's Technical Specifications."

The cause of this event was a failure to comply with established Site Standards, Policies and Administrative Controls including the application of self-checking, the use of proper communications and adherence to approved procedures. A contributing causal factor was the susceptibility of the radiation monitoring hardware to spurious actuations.

Immediate corrective actions included: 1) the invalid CREBAPS actuation signal was reset, 2) the CREBAPS was restored to normal system lineup, and 3) the CREBAPS air bank pressure was verified to meet the TS requirements. The follow-up corrective actions include: 1) a review of the event and counseling of the shift personnel involved was conducted by management, 2) the associated problem report was distributed for discussion during subsequent shift briefings, 3) an Operations Night Order was issued which required a review of the CREBAPS reset procedure by shift personnel, stressed the importance of verifying that the CREBAPS actuation is inadvertent and resetting the signal, versus isolating the CREBAPS air banks and prohibited use of the Trouble-Shooting Log for purposes other than documenting observations during the performance of approved procedures, 4) the Training Department will review this event and incorporate lessons learned into Licensed Operator training, and 5) a focused design review will be performed to assess the feasibility of radiation monitor subsystem design changes to prevent inadvertent CREBAPS actuations.

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**TEXT CONTINUATION**

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Beaver Valley Power Station Unit 1	05000334	96	012	00	2 OF 5

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**PLANT AND SYSTEM IDENTIFICATION**

Westinghouse - Pressurized Water Reactor (PWR)

Control Room Emergency Breathing Air Pressurization System {VI}\*

480 Volt AC Station Service System {ED}\*

Motor Control Center MCC-2-E09 {ED/MCC}\*

MCC-2-E09 Feeder Breaker 480VUS-2-8-6B {ED/FDR}\*

Radiation Monitoring System {IL}\*

Main Control Room Radiation Monitor Detector 2RMC\*RQ201 {IL/MON}\*

\*Energy Industry Identification System (EIIS) plant system and component codes are identified in the text as {EIIS:SS/CCC}

**CONDITIONS PRIOR TO OCCURRENCE**

Unit 1: Mode 1, 100% Reactor Power

Unit 2: Mode 5, 0% Reactor Power

There were no structures, systems or components that were inoperable at the start of the event that contributed to the event.

**DESCRIPTION OF THE EVENT**

On October 6, 1996, at approximately 1502 hours, the Unit 1 Control Room Emergency Breathing Air Pressurization System (CREBAPS) was isolated, a condition prohibited by Technical Specifications (TS). The CREBAPS, although controlled by Unit 1, is common to Units 1 and 2. At approximately 1459 hours, during the trip testing of Unit 2 motor control center (MCC) MCC-2-E09 {EIIS:ED/MCC} feeder breaker {EIIS:ED/FDR}, an inadvertent Control Room Emergency Breathing Air Pressurization System (CREBAPS) {EIIS:VI} actuation was initiated. It is recognized that Control Room Radiation Monitor 2RMC\*RQ201 {EIIS:IL/MON}, powered from MCC-2-E09, can inadvertently actuate CREBAPS on interruption and restoration of power, if its actuation circuitry is allowed to remain energized. Operational Surveillance Test 2OST-36.3, "Emergency Diesel Generator (2EGS\*EG2) Automatic Test," for example, identifies this concern and steps to address it. In preparation for the trip test of MCC-2-E09 feeder breaker, a Trouble-Shooting Log sheet was prepared to prescribe steps necessary to prevent an inadvertent CREBAPS actuation signal when the feeder breaker was reclosed. The individual who prepared the Trouble-Shooting Log sheet identified a breaker which would isolate CREBAPS actuation circuitry, to prevent an inadvertent signal. However, the breaker selected did not interrupt a second parallel path. Consequently, reclosure of MCC-2-E09 feeder breaker during test restoration caused an inadvertent CREBAPS actuation. Both units, upon verifying that the actuation was inadvertent, entered procedure OM 1/2.44A.4A.B, "Inadvertent CREBAPS Activation Recovery," to reset the actuation and stop the discharge of the CREBAPS air banks. Reset must typically be accomplished in less than ten minutes to avoid dropping below the Technical Specification (TS) required air pressure of 1825 psig. Isolation of the system air bottles requires entry into TS 3.0.3.

When the CREBAPS actuation occurred, the Unit 1 Assistant Nuclear Shift Supervisor (ANSS) contacted Operator A, a Unit 2 non-licensed operator by telephone. The Unit 1 ANSS told Operator A that the CREBAPS air banks were being discharged and requested that a Unit 1 operator be dispatched to the Unit 1 Primary Auxiliary Building elevation 768' (PAB 768), where the operator was to call the Unit 1 Control Room and standby for further instructions. This was a precautionary measure, in the



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event that CREBAPS isolation became necessary to prevent air bottle pressures from dropping below TS requirements. Operator A did not repeat back the Unit 1 ANSS' instructions. Unknown to the Unit 1 ANSS, Operator B, a Unit 1 Nuclear Control Operator (NCO), was listening to the conversation on another phone. Operator B, who recognized that he was not wearing the requisite dosimetry to enter the PAB 768, told a third operator, Operator C (another Unit 1 NCO), who was wearing a thermoluminescent dosimeter, to go to PAB 768 and isolate the CREBAPS air banks. At 1502 hours, Operator C isolated the CREBAPS air banks, then reported back to the Unit 1 Control Room. Since Technical Specifications (TS) for both Units require the CREBAPS air banks to be operable, isolation of CREBAPS is a condition prohibited by TS. Upon verification that a valid actuation signal did not exist, the CREBAPS actuation signal was reset at 1503 hours. At 1506 hours, the CREBAPS air banks were unisolated, the system was returned to the normal configuration and TS 3.0.3 was exited. CREBAPS was in an INOPERABLE status due to the manual isolation for approximately four minutes.

**CAUSE OF EVENT**

The cause of this event was a failure to comply with established Site Standards, Policies and Administrative Controls (SPAC) including the application of self-checking, the use of proper communications and adherence to approved procedures. A contributing causal factor was the susceptibility of the radiation monitoring hardware to spurious actuations.

**ANALYSIS OF EVENT**

As described in the Beaver Valley Power Station (BVPS) Operating Manual IOM-44A.1.B, "Air Ventilation Systems - Control Area Description," the CREBAPS consists primarily of ten compressed air bottles in five banks of two bottles each, with associated valves, piping, instrumentation and controls. CREBAPS is provided as a source of pressurization for the common Control Room envelope for Units 1 and 2, in the event of an accident in either unit that could result in high radioactivity or chlorine in the Control Room atmosphere. This bottled air supply is designed to release 1000 acfm of air directly into the Control Room envelope for one hour. This air flow will maintain the control areas of both units at a positive pressure, thus reducing the possibility of inleakage of contaminated outside air.

In accordance with BVPS Unit 1 Technical Specifications, Section 3.7.7.1, five bottled air pressurization subsystems are required to be OPERABLE with either unit in Modes 1, 2, 3 or 4 or during irradiated fuel movement or movement of loads over irradiated fuel. The ACTION STATEMENT for this TS states that the requirements of TS 3.0.3 are applicable with less than four bottled air pressurization subsystems OPERABLE. With the CREBAPS bottles inadvertently isolated or isolated to prevent depressurization caused by the inadvertent actuation, all five banks are INOPERABLE. According to TS for both Units, the bottles may be isolated for up to 8 hours for performance of instrumentation and control systems testing. However, inadvertent isolation of CREBAPS as occurred in this event, does not meet this criterion.

The identification of the breaker required to prevent inadvertent initiation of the CREBAPS actuation signal, to support the MCC-2-E09 feeder breaker test, was performed by a Unit 2 ANSS trainee. This individual, who is a Unit 2 licensed Reactor Operator (RO), was providing Operations support at the time, including assistance with the restoration from a Containment Isolation Phase B (CIB) test. The breaker information entered in the Trouble-Shooting Log sheet by the Unit 2 ANSS trainee was obtained via a review of an Operational Surveillance Test - 1/2OST-43.17C, "Control Room Area Monitor [2RMC\*RQ201] Functional Test," and a CREBAPS logic diagram. The power supply list from procedure 2OM-38.5.B.2, "120VAC Distribution and Lighting," was not used. The breaker error, which failed to recognize a parallel power supply path to the actuation circuitry from Unit 1, was not identified by the Unit 2 ANSS trainee who prepared the Trouble-Shooting Log sheet, the Unit 2 ANSS who reviewed it, or the relay test personnel performing the MCC feeder breaker test. During the recovery from the inadvertent CREBAPS actuation, instructions given to Operator A by the Unit 1 ANSS were not repeated back in accordance with Conduct of Operations procedures. The Unit 1 ANSS' instructions were not responded to by the operator who was given the instructions, but by a second operator who overheard the instructions. The second operator did not acknowledge the instructions, but took it upon his own initiative to relay them incorrectly to a third operator who isolated CREBAPS.

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During the past two years, there have been six CREBAPS isolations at BVPS, each the subject of an associated Licensee Event Report, including the one documented herein. These isolations were performed in response to inadvertent CREBAPS actuations which occurred due to testing or re-energizing the CREBAPS radiation monitors. The susceptibility of the radiation monitoring hardware to spurious actuations was a contributing causal factor to this event.

**CORRECTIVE ACTIONS**

1. Verified the CREBAPS actuation was inadvertent and reset the signal at approximately 1503 hours on October 6, 1996.
2. Restored the CREBAPS air banks to the normal system lineup at approximately 1506 hours on October 6, 1996.
3. Verified that the CREBAPS air bank pressure met TS requirements and exited TS 3.0.3 at approximately 1506 hours on October 6, 1996.
4. The General Manager of Nuclear Operations (GMNO) interviewed and counseled each of the operations shift personnel involved in this event who failed to meet established Site Standards, Policies and Administrative Controls. The GMNO's expectations for the future performance of these individuals were clearly communicated and documented.
5. This event was discussed by management with the involved operations shift personnel at a safety meeting on October 6, 1996 with emphasis on the importance of proper communications and procedural compliance.
6. Distribution of the associated problem report for discussion during subsequent operations shift briefings on both units was performed on October 6, 1996.
7. An Operations Night Order was issued on October 7, 1996 which required a review of the CREBAPS reset procedure by operations shift personnel and stressed the importance of verifying that the CREBAPS actuation is inadvertent and resetting the signal, versus isolating the CREBAPS air banks. The Night Order also prohibited use of the Trouble-Shooting Log for purposes other than documenting observations during the performance of approved procedures.
8. The Training Department will review this event and incorporate lessons learned into Licensed operator training, with emphasis on the importance of compliance with SPAC, especially application of self-checking, use of proper communications and procedural adherence, by April 11, 1997.
9. A focused design review will be performed on the radiation monitor subsystem to determine the feasibility of design changes to prevent future inadvertent CREBAPS actuations. This design review will be completed by December 31, 1996.

**REPORTABILITY**

Since this event involved entry into Technical Specification 3.0.3, it is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as "Any operation or condition prohibited by the plant's Technical Specifications."

**SAFETY IMPLICATIONS**

There were no safety implications to the health and safety of the public due to this event. The CREBAPS is designed to support control room habitability which was not impaired by this event. The CREBAPS was quickly restored to normal lineup subsequent to the inadvertent actuation and isolation in accordance with plant procedures.

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**SIMILAR EVENTS**

During the past two years, the following Licensee Event Reports have been submitted involving CREBAPS actuation and entry into Technical Specification 3.0.3:

**Beaver Valley Power Station Unit 1**

1. LER 95-005-00 Technical Specification 3.0.3 Entry Due to Isolation of Control Room Emergency Breathing Air Pressurization System.
2. LER 95-008-00 Technical Specification 3.0.3 Entry Due to Isolation of Control Room Emergency Habitability System.
3. LER 96-002-00 Technical Specification 3.0.3 Entry Due to Isolation of Control Room Emergency Breathing Air Pressurization System.

**Beaver Valley Power Station Unit 2**

1. LER 95-001-00 Entry into Technical Specification 3.0.3 Due to Isolation of Control Room Habitability Air Bottle Subsystem.
2. LER 95-002-00 Entry into Technical Specification 3.0.3 Due to Isolation of Control Room Habitability Air Bottle Subsystem.