Duquesne Light

Nuclear Group
P.O. Box 4
Shippingport, PA 15077-0004

Telephone (412) 393-6000

October 8, 1992
ND3MNO:3361

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
LER 92-008-00

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

Gentlemen:

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

LER 92-008-00, 10 CFR 50.73.a.2.i.B, "Imcomplete Containment Hydrogen Analyzer Surveillance as a Result of Inadequate Change Implementation".

Very truly yours,

J. D. Sieber for,
T. P. Noonan
General Manager
Nuclear Operations

JGT/sl

w/Attachment

IE22
1/1

cc: Mr. T. T. Martin, Regional Administrator
United States Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA 19406

J. A. Holtz, Ohio Edison
76 S. Main Street
Akron, OH 44308

Mr. A. DeAgazio, BVPS Licensing Project Manager
United States Nuclear Regulatory Commission
Washington, DC 20555

Larry Rossbach, Nuclear Regulatory Commission,
BVPS Senior Resident Inspector

Larry Beck
Centerior Energy
6200 Oak Tree Blvd.
Independence, Ohio 44101-4661

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

G. E. Muckle,
Factory Mutual Engineering
680 Anderson Drive #BLD10
Pittsburgh, PA 15220-2773

Mr. Richard Janati
Department of Environmental Resources
P. O. Box 2063
16th Floor, Fulton Building
Harrisburg, PA 17120

Director, Safety Evaluation & Control
Virginia Electric & Power Co.
P.O. Box 26666
One James River Plaza
Richmond, VA 23261

W. Hartley
Virginia Power Company
5000 Dominion Blvd.
2SW Glenn Allen, VA 23060

J. M. Riddle
Halliburton NUS
Foster Plaza 7
661 Anderson Drive
Pittsburgh, PA 15220

Bill Wegner, Consultant
23 Woodlawn Terrace
Fredricksburg, VA 22404

NRC FORM 366 (5-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Beaver Valley Power Station Unit 1	0 5 0 0 0 3 3 4	1 OF 0 5

TITLE (4)

Incomplete Containment Hydrogen Analyzer Surveillance As a Result of Inadequate Change Implementation

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 NAMES	DOCKET NUMBER(S)
0 9	0 9	9 2	9 2	–	0 0 8	– 0 0	1 0	0 8	9 2	N/A	0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 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)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
T.P. Noonan, General Manager Nuclear Operations	4 1 2 6 4 3 – 1 2 5 8

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	
D	B B	X X X X	X X X X	N							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 9/9/92, a review of the surveillance procedures for the containment wide range hydrogen analyzers revealed that they were not tested as required by Technical Specifications. The surveillance for the hydrogen analyzers requires a channel calibration using sample gasses containing one and four volume percent hydrogen. The calibration procedures required a zero, four, and nine volume percent hydrogen concentration, but did not require one volume percent. When the determination was made that the analyzers were not tested as required by Technical Specifications, both analyzers were declared inoperable at 0800 hrs on 9/9/92. The surveillance procedures were revised to include the one volume percent hydrogen sample gas. At 1839 hrs. on 9/9/92, the A hydrogen analyzer surveillance procedure was completed successfully, and the analyzer was declared operable. The revised B hydrogen analyzer procedure was completed successfully, and the analyzer was declared operable 2227 hrs. on 9/9/92. The cause of the incomplete surveillance was a result of inadequate implementation of a Technical Specification amendment in 1986. The amendment replaced narrow range analyzers with wide range analyzers that were installed in 1982. The existing wide range surveillance procedures, that were based on vendor recommendations, were not verified for compliance with the surveillance requirement.

DESCRIPTION OF EVENT

On 9/9/92, the Independent Safety Evaluation Group completed a review of the surveillance requirements for the containment wide range hydrogen analyzers [H2-HY101A and H2-HY101B], and concluded that they were not tested as required by Technical Specifications. Technical Specification 3.6.4.1, requires that two separate and independent wide range containment hydrogen analyzers are to be operable in operational Modes 1 and 2. The surveillance for the hydrogen analyzers requires that once per 92 days the analyzers be demonstrated operable by performing a channel calibration using sample gasses containing one volume percent (1%) and four volume percent (4%) hydrogen, with the balance gas containing nitrogen.

A review of the Maintenance Surveillance Procedures, (MSP 1.46.04A and MSP 1.46.04B, Containment Hydrogen Monitoring Loop H2-HY101A(B) Calibration), determined that the analyzers were not tested with the one volume percent (1%) sample gas. The calibration procedures required a zero (0), four (4), and nine (9) volume percent hydrogen concentration.

When the determination was made that the analyzers were not tested in accordance with Technical Specification 3.6.4.1, both analyzers were declared inoperable at 0800 hrs on 9/9/92. Since the unit was at 90% (Mode 1), the Technical Specification action statement required that one must be restored within 72 hrs., or the unit must be placed in hot standby (Mode 3) within the next 12 hrs.

The surveillance procedures were revised to include the one volume percent (1%) hydrogen sample gas. At 1839 hrs. on 9/9/92, the Train A hydrogen analyzer surveillance procedure was completed satisfactorily, and the analyzer was declared operable. In accordance with the action statement requirement of Technical Specification 3.6.4.1, with one wide range hydrogen analyzer inoperable, the inoperable analyzer must be restored within the next 30 days, or hot standby (Mode 3) must be entered in the next 12 hrs.

The revised surveillance procedure was completed successfully on the Train B analyzer, and the analyzer was declared operable at 2227 hrs. on 9/9/92.

CAUSE OF EVENT

The cause of the incomplete surveillance was a result of inadequate implementation of a Technical Specification change in 1986. The original station design included two (2) narrow range hydrogen analyzers, [H2-HY100A and H2-HY100B]. The Technical Specification surveillance for the analyzers required a channel calibration using sample gasses containing one (1) and four (4) volume percent hydrogen, and the balance gas containing nitrogen. The analyzers were tested every 92 days by the performance of MSP 1.46.03A and 1.46.03B, Hydrogen Analyzer H2-HY100A(B) Calibration. These surveillance procedures properly used one (1) and four (4) volume percent hydrogen sample gasses as required by Technical Specifications.

In 1982, two (2) wide range hydrogen analyzers (0 to 10%) were added per the requirements of NUREG 0737, Clarification of TMI Action Plan Requirements. Preoperational testing was based on vendor recommendations (Teledyne Analytical Instruments) which recommended sample gas concentrations of zero volume percent (0%) hydrogen (100% nitrogen was used), and four (4) and nine (9) volume percent hydrogen. Although the new wide range analyzers were not required by Technical Specifications, new Maintenance Surveillance Procedures, MSP 1.46.04A and MSP 1.46.04B were written and issued on 6/25/82. The surveillance procedures were based on the gas concentrations used for the preoperational tests, and were tested once every 92 days on a staggered testing basis.

Technical Specification Amendment 105 went in effect on 8/12/86 which changed Technical Specification 3.6.4.1. The amendment was to fulfill two purposes, one was an administrative change to identify the wide range analyzers installed as a result of NUREG 0737 as the Technical Specification required monitors, and to modify the action statement as recommended by Generic Letter 83-37. The surveillance requirements of one (1) and four (4) volume percent hydrogen were not changed. The existing surveillance procedures for the wide range analyzers, MSP 1.46.04A and 1.46.04B were to be used to prove operability per the Technical Specification surveillance requirements. Following the approval of the amendment, the narrow range analyzers were to be retired, and the narrow range analyzer surveillance procedures were to be cancelled. During the amendment review process, the required gas concentrations in the Technical Specification surveillance requirements were not compared to the concentrations identified the wide range analyzer surveillance procedures, since the surveillance procedures for the wide range analyzers were known to exist, and the Technical Specification amendment did not change the surveillance requirements.

CORRECTIVE ACTIONS

The corrective actions taken as a result of this event are:

1). Upon notification of the incomplete surveillance testing of the wide range hydrogen analyzers, both analyzers were immediately declared inoperable.

2). The two (2) surveillance procedures were revised to require a test gas concentration of one volume percent (1%) hydrogen, and the balance gas containing nitrogen.

3). Both hydrogen analyzers were successfully retested using the revised surveillance procedures and declared operable.

4). A review of the surveillance requirements for the Beaver Valley Unit 2 wide range hydrogen analyzers was performed. The Technical Specification surveillance for the hydrogen analyzers also requires a channel calibration using sample gasses containing one volume percent (1%) and four volume percent (4%) hydrogen, with the balance gas containing nitrogen. The Beaver Valley Unit 2 surveillance procedures have always required a sample gas concentration of one volume percent (1%) and four volume percent (4%) hydrogen, with the balance gas containing nitrogen.

5). Since this event (1986), the administrative controls for the implementation of Technical Specification changes have been strengthened and formalized. The station groups affected by the proposed Technical Specification amendment are now required by an administrative procedure to perform a review to identify all procedures affected by the change. Draft procedure changes are prepared which are reviewed at a meeting which is held before the amendment is submitted to the Nuclear Regulatory Commission. Independent reviewers are also appointed to ensure the proposed change can be adequately implemented.

REPORTABILITY

The failure to perform a required surveillance results in a condition prohibited by Technical Specifications. As such, this event is reportable in accordance with 10 CFR 50.73.a.2.i.B.

SAFETY IMPLICATIONS

At no time was the margin of safety to the general public reduced. The hydrogen gas concentration in containment is measured by a thermal conductivity cell in the measurement loop located in the analyzer. The conductivity cell output is an amplified, linearized signal which is supplied to the analyzer meter and alarm circuits, with a range of 0 to 10%. The previous calibration procedure tested the analyzer over a range of 0 to 9%. Since the analyzer output is a linear function, the zero (0), four (4), and nine (9) volume percent calibration concentrations could be interpolated to include the 1 volume percent (1%) Technical Specification requirement.

PREVIOUS SIMILAR EVENTS

There has been one previous event that resulted in a missed surveillance due to inadequate change implementation, and is documented in Licensee Event Report 88-005-01, Containment Isolation Valves Omission from Surveillance Testing. Three containment isolation valves were installed in 1982 as part of an extensive fire protection design change. Due to personnel error on the part of the procedure writer responsible for revising the procedure changes, they were omitted from the surveillance test that verified valve closure following a containment isolation signal.