Duquesne Light Company Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077-0004

JOHN D. SIEBER
Vice President - Nuclear Group

(412) 393-5255

April 29, 1991

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Additional Information for Exemption Request

The following information is provided in support of the application for exemption from GDC -57, submitted by letters dated January 11, 1990 and March 23, 1990. This information was discussed with the NRR Project Manager and staff reviewers during an August 1, 1990 telephone conference, and during more recent telephone conversations. The information describes the special circumstances, as stipulated in 10 CFR 50.12(a)(2), that support the exemption request.

The Code of Federal Regulations in 10 CFR 50, Appendix A, General Design Criterion (GDC) 57 requires that each line that penetrates the primary reactor containment and is neither part of the reactor coolant system boundary nor connected directly to the containment atmosphere, shall have at least one containment isolation valve (CIV) which should be either automatic, locked closed, or capable of remote operation. It further stipulates that this valve shall be outside containment and located as close to the containment as practical.

Duquesne Light Company proposes to use manual valves in certain river water sample lines to satisfy the above closed system isolation criterion.

Each of the four river water lines, located downstream of the recirculation spray heat exchangers, has a radiation monitor sample line connection. These sample line connections are outside of containment and upstream of the containment isolation valves in the river water lines. The sample lines contain manual valves that will serve as containment isolation valves.

A001
1/1

The sample line isolation valves are outside of containment and have been located as close to the containment as practical. It is impractical to use the first valve in each sample line (i.e. RW-462, -463, -464, -465) since these valves are inaccessible due to high post accident radiation levels in the area (approximately 3,000 R/HR). The next valve in the sample line that can be used for containment isolation (RW-615, -621, -627, -633) is located at the radiation monitor skid and is in an area predicted to have lower post accident radiation levels.

Manual valves RW-615, -621, -627, and -633 have been selected to serve as the containment isolation valves. (Please refer to the attached drawing.) If this exemption request is granted, these valves will be included in Technical Specifications and will be tested according to the requirements of ASME Section XI. In addition, the radiation monitor alarm response procedure will be revised to require isolation of these containment isolation valves.

The sample lines do not form a path for radioactivity release due to the existence of two physical barriers: the recirculation spray heat exchanger tubes and the manual valves described above. The recirculation spray heat exchangers are constructed of stainless steel and are welded at all points where there is a potential for leakage of radioactive recirculation water into the river water system. In addition, the heat exchangers are periodically tested for leaks. The high quality construction and test program serve as strong measures to provide assurance against potential leaks.

In the unlikely event of an accident involving the release of radioactive material to the containment building and a recirculation spray heat exchanger tube leak, radiation monitors in the river water sample lines would alarm in the control room. Control room operators would then take action to isolate the affected river water line and sample line. Isolation of the river water line and sample line provides the necessary second barrier to the release of radioactive material.

Sample line isolation valves are normally open and must be open following an accident so that the associated radiation monitors can perform their function. Thus, an automatic or locked closed isolation valve in the sample lines is not needed or desirable.

Remote operation of the sample line isolation valves has not been provided. However, the manual sample line isolation valves can be reached within 10 minutes by an operator dispatched from the control room.

A delay in closure of the sample line isolation valves will not produce a significant increase in the total offsite release resulting from the design basis accident compounded by the additional failure of a recirculation spray heat exchanger tube. In fact, the sample line flow rate (4 gpm) is approximately one tenth of one percent of the flow rate in the sampled river water line. It should also be noted that the containment pressure is predicted to return to subatmospheric within one hour following initiation of the design basis accident, eliminating the possibility for containment out leakage. In addition, any leakage from the sample lines would be collected by floor drains and processed by the liquid waste system.

This exemption request satisfies the criteria of 10CFR50.12(a)(2) as follows:

- Plant modifications are not necessary since the current configuration, with the procedure and Technical Specification changes discussed above, will achieve the underlying purpose of the rule, and

- Excessive costs would be incurred if a plant modification providing remote operation of sample line isolation valves were implemented to satisfy the rule. The cost of such a plant modification is not warranted in view of the insignificant effect on accident consequences.

Also, operation of the plant as discussed above will not present an undue risk to public health and safety. If you have any questions regarding the information provided above, please contact Ken McMullen at (412) 393-5214.

Sincerely,

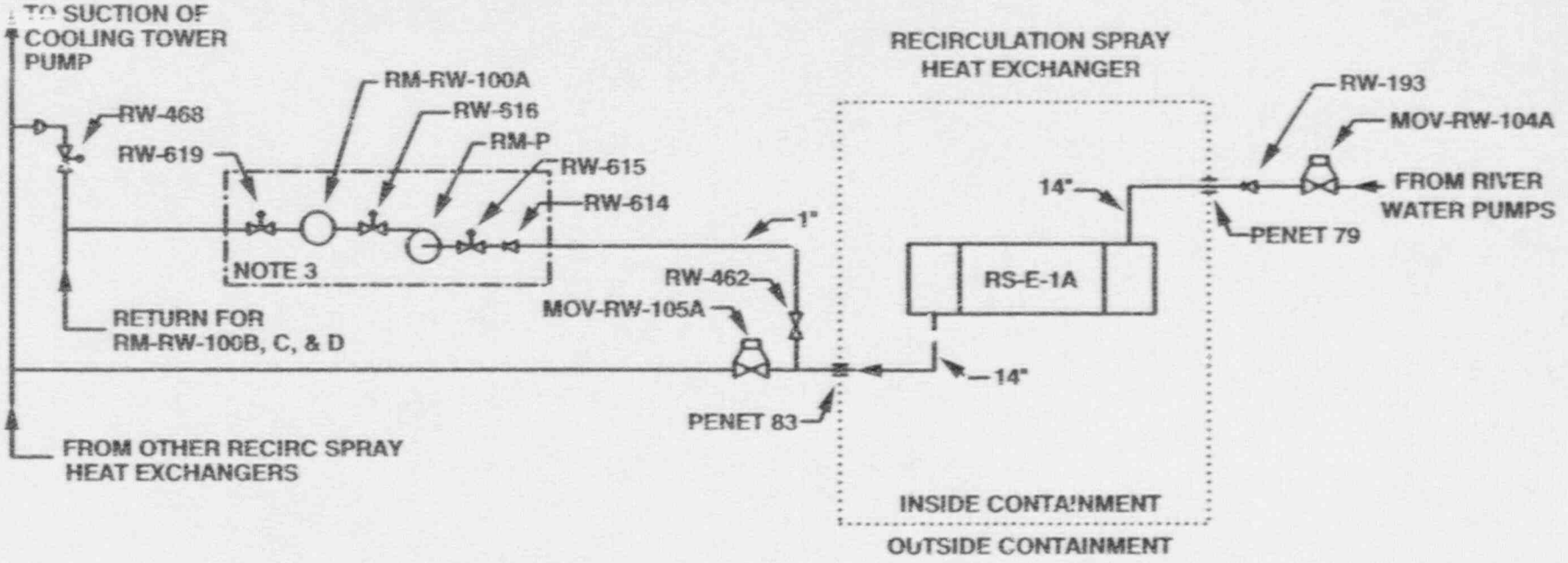
J. D. Sieber
Vice President
Nuclear Group

Attachment

cc: Mr. J. Beall, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. A. W. DeAgazio, Project Manager
Mr. R. Saunders (VEPCO)

CONTAINMENT ISOLATION ARRANGEMENT FOR RECIRCULATION SPRAY HEAT EXCHANGER RIVER WATER RADIATION MONITOR SAMPLE LINES

BEAVER VALLEY
UNIT 1



RW	RM RW	RW	RW	RW	MOV RW	RW	PENET	RS E	PENET	RW	MOV RW
619	100A	616	615	614	105A	462	83	1A	[illegible]	[illegible]33	104A
625	100B	622	621	620	105B	464	85	1B	81	195	104B
631	100C	628	627	626	105C	463	84	1C	80	194	104C
637	100D	634	633	632	105D	465	86	1D	82	196	104D

Notes: 1. This drawing is provided for information only.
2. Drain lines and expansion joints have not been shown on this drawing.
3. Radiation monitor skid, with sample pump, and associated valves.