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June 13, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. George W. Knighton, Chief
Licensing Branch 3
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Outstanding/Confirmatory Issue Response

Gentlemen:

This letter forwards responses to the issues listed below, which were discussed at a meeting with the Radiological Assessment Branch. Duquesne Light Company plans to incorporate the responses as indicated in each attachment into FSAR Amendment 8. The following items are attached:

Attachment 1: Response to Confirmatory Issue 12 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 2: Response to Confirmatory Issue 13 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 3: Response to Confirmatory Issue 14 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 4: Response to Confirmatory Issue 15 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 5: Response to Confirmatory Issue 16 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 6: Response to Outstanding Issue 95 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 7: Response to Outstanding Issue 96 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

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Attachment 8: Response to Outstanding Issue 97 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 9: Technical Specifications

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

GLB/wjs
Attachment

cc: Mr. H. R. Denton, Director NRR (w/a)
Mr. D. Eisenhut, Director Division of Licensig (w/a)
Mr. G. Walton, NRC Resident Inspector (w/a)
Mr. M. Licitra, Project Manager (w/a)
Ms. M. Ley, Project Manager (w/a)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF ALLEGHENY)

On this 13th day of June, 1984, before me, a Notary Public in and for said Commonwealth and County, personally appeared E. J. Woolever, who being duly sworn, deposed and said that (1) he is Vice President of Duquesne Light, (2) he is duly authorized to execute and file the foregoing Submittal on behalf of said Company, and (3) the statements set forth in the Submittal are true and correct to the best of his knowledge.

Anita Elaine Reiter
Notary Public

ANITA ELAINE REITER, NOTARY PUBLIC
ROBINSON TOWNSHIP, ALLEGHENY COUNTY
MY COMMISSION EXPIRES OCTOBER 20, 1986

ATTACHMENT 1

Response to Confirmatory Issue 12 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 12.2.1: By-product, Source, and Special Nuclear Material Description (Excerpt)

A description of by-product, source and special nuclear material of consideration in plant shielding design will be provided seven to nine months before fuel loading (Q471.14).

Response:

The need for procurement of sources beyond those now in use at BVPS-1 has not been fully determined. Seven to nine months prior to fuel loading, a description of by-product, source, and special nuclear material that requires shielding design considerations will be provided. A listing of isotope, quantity, form, and use of all special nuclear material exceeding 100 millicuries and requiring shielding design considerations will also be provided. This information will be included in the FSAR in accordance with Regulatory Guide 1.70, Revision 2.

ATTACHMENT 2

Response to Confirmatory Issue 13 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 12.3.1: Verification that Cobalt use in Primary System has been Minimized (Excerpt)

> The applicant's corrosion product control features are consistent with the guidance of Regulatory Guide 8.8 and are acceptable, although confirmation that the basic plant design reflects an effort to minimize the cobalt content of materials used in primary systems is needed (Q471.10).

Response:

> FSAR Section 12.3 and the response to Question 471.10 will be revised as shown on the attached pages.

Remote handling equipment is provided for removing filters from the filter vessels and for placing them into shipping containers. Contact operations in high dose rate areas are minimized.

The solid waste system is essentially a remotely operated system. Operations are conducted remotely or manually after the waste source has been shielded.

Stations for potentially radioactive valves are, in general, arranged either in shielded cubicles away from the equipment served and/or are provided with reach rods. The demineralizer and filter valves are in cubicles below and adjacent to the vessels and are also provided with reach rods.

17. All features for radiation control are designed to accommodate maximum expected failures such as fuel element cladding failures and steam generator tube leaks.

    Design features such as shielding and radiation zones accommodate clad defects for 1 percent failed fuel and primary to secondary steam generator tube leaks of 144 gal/day.

18. Sampling sites are located so exposures will be ALARA during such routine operations as sampling off-gas, primary coolant, and liquid waste.

    A sampling room is provided for the remote taking of routine samples from points in the reactor and auxiliary systems with the exception of the samples from the evaporators. Sample points for the evaporators are provided with a sample sink and ventilation hood, splash screen, and valves located outside the splash screen. The samples are provided with a recirculation path behind the shield wall at the sample sink with reach rods for the operator. A shielded sample station is also provided for solid waste streams (for example, evaporator bottoms, resins and sludges).

19. Redundancy of equipment is utilized in the plant design to facilitate ALARA by allowing longer holdup time between scheduled fluid processing and by reducing the urgency for accelerated equipment repair. Redundant radwaste solidification drum inspection/labeling stations permit processing more drums in shorter periods of time to reduce individual exposure to radioactive sources.

[INSERT 1]

Two safeguards recombiner area monitors are provided outside the cubicles in which the post-DBA hydrogen recombiners are located.

A list of area radiation monitors and their locations, sensitivities, and ranges is presented in Table 12.3-10. The sensitivity of each monitor is the lower value of the monitored range.

12.3.5 References for Section 12.3

Stone & Webster Engineering Corporation (SWEC) 1975. Radiation Shielding Design and Analysis Approach for Light Water Reactor Plants. Topical Report RP-8A, Boston, Mass.

SWEC 1981a. QADMOD - Point Kernel Gamma Transport. NU-137.

SWEC 1981b. ANISND - A One-Dimensional Discrete Ordinates Transport Code with Anisotropic Scattering. NU-146.

SWEC 1981c. COHORT2 - Monte Carlo Radiation Environment Analysis. NU-157.

SWEC 1982. GAMTRAN1 - Gamma Transport by Point Kernel Technique. NU-003.

U.S. Nuclear Regulatory Commission 1980. Clarification of TMI Action Plan Requirements. NUREG-0737.

[INSERT 2]

INSERT 1

20. Materials

Equipment specifications for components in the nuclear steam supply system contain specific limitations on the cobalt impurity content of the base metal as given in Table 12.3-11 thereby controlling the potential for production of radioactive cobalt-60 from the base metal impurity cobalt-59. The estimated surface area of material in contact with the reactor coolant is given in Table 12.3-11. The use of hard facing material with cobalt content such as stellite is limited to applications where its use is necessary for reliability considerations. Table 12.3-13 shows the estimated total surface area of stellite in the nuclear steam supply system. Nickel based alloys in the nuclear steam supply system (cobalt-58 is produced from activation of the base metal nickel-58) are similarly used only when component reliability may be compromised by the use of other materials. The major use of nickel based alloys in the nuclear steam supply system is the inconel steam generator tubes. The surface area in contact with the reactor coolant system is given in Table 12.3-12. From Tables 12.3-12 and 12.3-13, it can be seen that the inconel surface is the predominate area in contact with the reactor coolant system and that the stellite area is minimal. A further discussion of material considerations is given in Westinghouse (1977).

INSERT 2

Westinghouse 1977. "Design, inspection, operation, and maintenance aspects of the Westinghouse NSSS to maintain occupational radiation exposures as low as reasonably achievable," WCAP 8872, April 1977.

TABLE 12.3-11

EQUIPMENT SPECIFICATION LIMITS FOR COBALT IMPURITY LEVELS

Component	Material	Maximum Weight Percent Cobalt
Reactor internals (nonactive region)	SS*	0.20
Reactor internals (active region)	SS	0.12
Reactor vessel clad	SS	0.20
Reactor coolant piping	SS	0.20
Reactor internal bolting material	SS	0.25
Reactor coolant pumps	SS	0.20
Pressurizer	SS	0.20
Auxiliary heat exchanger surfaces exposed to reactor coolant	SS	0.20
Steam generators	Inconel	0.10
Fuel (nonactive region)	SS	0.12
Fuel (active region)	SS	0.08
Fuel	Inconel	0.10
Fuel	Zircaloy	0.002

*SS = Stainless steel

TABLE 12.3- 12

APPROXIMATE REACTOR COOLANT SYSTEM WETTED SURFACE AREAS

Component	Material	Surface Area (ft2)
Reactor internals	SS*	4236
Reactor vessel clad	SS	2190
Reactor coolant piping	SS	2758
Reactor internal building material	SS	Negligible
Reactor coolant pumps	SS	Negligible
Auxiliary heat exchanger surfaces	Inconel	Negligible
Steam generators	Inconel	1.90×10^5
Fuel (nonactive region)	SS	2000
Fuel (active region)	SS	3600
Fuel	Inconel	7.80×10^3
Fuel	Zircaloy	7.78×10^4

*SS - Stainless steel

TABLE 12.3-13

APPROXIMATE REACTOR COOLANT SYSTEM WETTED SURFACE AREA OF STELLITE

Component	Surface Area (ft2)
Reactor internals	3.2
Reactor coolant pump journals	17.2
Control rod drive mechanisms	10.8
Reactor coolant system valves	2.6

NRC Letter: August 31, 1983

Question 471.10

Discuss how material selection and water chemistry control will be utilized at BVPS-2 to reduce the production, distribution, and retention of activation products.

Response:

Material selection for components in the reactor coolant system is discussed in Sections 4.5, 5.2.3.1, 5.3.1, 5.4.2.1, and 5.4.3. Water chemistry control and reactor coolant purification are discussed in Sections 5.2.3.2.1 and 9.3.4.

Use of corrosion-resistant materials, implementation of water chemistry monitoring procedures to control the oxygen content and impurities in the reactor coolant system, and continuous purification of the reactor coolant letdown through cleanup systems reduces the production and retention of activated solid corrosion products. The chemical and volume control system is designed to provide an effective means for removing these corrosion products from the primary coolant, as discussed in Section 9.3.4.

REFER TO REVISED SECTION 12.3.1.2 FOR A DISCUSSION OF COBALT CONTENT IN PRIMARY SYSTEM MATERIALS.

ATTACHMENT 3

Response to Confirmatory Issue 14 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 12.3.4.1: Containment High-Range Radiation Monitors (Excerpt)

> Additional information regarding containment high-range-radiation monitors (NUREG-0737, Item II.F 1[3]) needed to complete the review will be provided by the applicant (Q471.14).

Response:

> FSAR Table 12.3-10 has been revised to provide the missing information related to containment high-range radiation monitors as shown on the attached page. the response to question 471.14 will be revised accordingly.

TABLE 12.3-10

AREA RADIATION MONITOR LOCATIONS AND RANGES

Detector Location	Sensitivity and Range* (mRem/hr)
Reactor containment area, low range	$1-10^5$
Outside personnel hatch area	$1-10^7$
Reactor in-containment area, high range	10^3-10^{10}
Manipulator crane	$1-10^5$
In-core instrumentation area	$1-10^5$
Decontamination area	$0.1-10^4$
New fuel storage area	$0.1-10^4$
Fuel pit bridge	$0.1-10^4$
Auxiliary building	$0.1-10^4$
Sample room	$0.1-10^4$
Waste handling area	$0.1-10^4$
Condensate polishing area	$0.1-10^4$
Control room	$10^{-2}-10^3$
Safeguards recombiner area	$1-10^5$

NOTE:

*Sensitivity is equal to the lower value of the range.

ATTACHMENT 4

Response to Confirmatory Issue 15 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 12.3.4.2: Airborne Radioactivity Monitors (Excerpt)

> The applicant will install airborne radioactivity monitoring systems (RMS) in work areas where there is a potential for airborne radioactivity. Visual and audible alarms are provided in the main control room for these monitors. The licensee should verify that the RMS airborne monitors have the capability to detect 10 mpc hours of particulate and iodine radioactivity in any compartment that has a possibility of containing airborne radioactivity and that may be occupied by personnel. The applicant will provide portable continuous air monitors when needed to monitor air in areas not provided with fixed airborne radioactivity monitors. Airborne Radioactivity monitors will be calibrated at regular time intervals as required in Technical Specifications.

Response:

> FSAR 12.3.4.1 provides the requested information. A calculation has been performed to confirm the capability to detect 10 mpc hours.

ATTACHMENT 5

Response to Confirmatory Issue 16 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 12.5.3: Quality Assurance Program Requirements (Excerpt)

> Verification that quality assurance requirements related to radiation protection have been implemented at Beaver Valley 2 in accordance with Regulatory Guide 1.33, "Quality Assurance Program Requirements," should be provided.

Response:

FSAR 12.5.3 will be revised as shown on the attached page.

QUALITY ASSURANCE REQUIREMENTS RELATED TO RADIATION PROTECTION ARE IMPLEMENTED AT BVPS-2 AS DESCRIBED IN REGULATORY GUIDE 1.33.

The radiological limits, controls, and policies as described in the Radcon Manual will be consistent and in compliance with the recommendations and requirements of applicable federal and state regulatory agencies. In accordance with both company and station administrative policies, compliance with the controls, limits, and requirements of the Radcon Manual will be mandatory.

The Radcon Manual will be supplemented by other work procedures to assure that abnormal or unique work practices and/or operations are conducted in accordance with the Radcon Program. This will ensure standards and limits specified therein are carefully and conservatively followed so that radiation exposures, contamination (surface or airborne) levels, and radioactive waste volumes are maintained as low as reasonably achievable and consistent with established requirements.

The Radcon Manual and other work procedures will contain information on external radiation protection, respiratory protection, protective clothing, etc; including detailed specifications, qualifications, precautions, performance limits, and/or controls and any other information, instructions, or guidelines required to minimize personnel exposure.

The Radcon Program, as presented in the Radcon Manual, will be developed in accordance with 10 CFR 20 and other applicable federal and state regulations. Revisions in applicable regulations that are adopted and published in the Federal Register, or are issued in the NRC Regulatory Guides will be evaluated by the Nuclear Division Staff, as well as the station staff. If warranted, the Radcon Manual will be revised to be consistent with the revised rules and practices.

The Radcon Program and its implementation will be audited periodically by qualified person(s), who are not assigned to the station, to ensure the program is in compliance with existing requirements. Audit findings will be reported to mangement for their information and appropriate action.

12.5.3.1 ALARA

Physical and administrative controls will be instituted to assure DLC's philosophy of maintaining personnel exposures as low as reasonably achievable (ALARA) is implemented.

12.5.3.1.1 Physical and Administrative Controls

Operation of the plant, as well as certain maintenance and repair tasks, may require access to and work in all areas of the plant. This includes areas defined by 10 CFR 20, as radiation areas and high

ATTACHMENT 6

Response to Outstanding Issue 95 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 12.3.4.1: Exemption to 10CFR70.24(a) and Description of Alternative to Required Criticality Monitors (Excerpt)

> The applicant has provided area radiation monitors around the fuel storage areas. These do not meet the particular requirements of 10CFR70.24 and the related guidance of Regulatory Guide 8.12, "Criticality Accident Al rm Systems;" however, the applicant will file for an exemption from 10CFR70.24(b) by September 1984. The applicant must still provide a discussion of the proposed alternative monitoring methods as requested by the staff (Q471.3).

Response:

> The response to Question 471.3 will be revised as shown on the attached page.

NRC Letter: August 31, 1983

Question 471.3

DLC has indicated in Table 1.9-2 that an application for an exemption from the installation of the criticality monitor required in accordance with 10 CFR Part 70.24(b) and Regulatory Guide 8.12 will be filed with the NRC. Provide a commitment date for this action and describe the specific alternative methods to be used in lieu of the required monitors.

Response:

The application for exemption will be formally filed as part of the application for a special nuclear materials license which is to be submitted in September 1984. Alternative methods which preclude the need for a criticality monitor include administrative controls for the movement of fuel and appropriate design of fuel storage facilities to prevent criticality, and plant security controls. THESE ALTERNATIVES ENSURE THAT HIGH RADIATION LEVELS OR CRITICALITY RESULTING FROM FUEL HANDLING OR STORAGE WILL NOT OCCUR IN THE BVPS-2 FUEL BUILDING:

1. GEOMETRIC SPACING IS PROVIDED IN THE NEW AND SPENT FUEL AREAS TO PRECLUDE CRITICALITY. AS DISCUSSED IN FSAR 9.1.1 AND 9.1.2, DETAILED CRITICALITY ANALYSES ARE PERFORMED TO DEMONSTRATE THAT FOR ALL CREDIBLE NORMAL AND ABNORMAL FUEL ASSEMBLY/RACK CONFIGURATIONS, THE SPENT FUEL OR NEW FUEL K_{eff} WOULD REMAIN AT OR BELOW .95 AND .98 RESPECTIVELY.
2. REDUNDANT LIMIT SWITCHES ON THE SPENT FUEL POOL PLATFORM CRANE ENSURE THAT A RAISED FUEL ASSEMBLY IN THE SPENT FUEL POOL WILL ALWAYS REMAIN AT LEAST 9ft. 3in. BELOW THE SURFACE OF THE WATER. SPECIFIC DETAILS ARE PROVIDED IN SECTION 9.1.
3. FUEL MOVEMENTS ARE GOVERNED BY DETAILED PLANT PROCEDURES WHICH ARE PREPARED, REVIEWED AND APPROVED AS NECESSARY IN ACCORDANCE

WITH ADMINISTRATIVE PROCEDURES WHICH ASSURE THE PROCEDURE WILL BE ADEQUATE FOR ITS INTENDED PURPOSE.

TWO AREA RADIATION MONITORS ARE PROVIDED IN THE FUEL STORAGE AREA. THESE . . . ARE GM-TUBE TYPE MONITORS WITH RANGES OF 10^{-1} TO 10^{4} mr/hr. MONITOR 2RMF-RQI-201 IS LOCATED AT THE 756 ft ELEVATION OF THE NEW FUEL STORAGE AREA WHILE MONITOR 2RMF-RQI-202 IS LOCATED ON THE SPENT FUEL HANDLING BRIDGE AT THE 775 ft. ELEVATION. CALIBRATIONS AND CHECKS OF THESE INSTRUMENTS AT REGULAR INTERVALS WILL BE PERFORMED IN ACCORDANCE WITH A FORMAL CALIBRATION PROGRAM TO MAINTAIN ACCURACY WITHIN NECESSARY LIMITS. THE FREQUENCY OF CALIBRATION WILL BE BASED UPON THE RESULTS OF PREVIOUS CALIBRATIONS, THE OBSERVED STABILITY OF THE EQUIPMENT, AND CONSIDERATION OF MAJOR ACTIVITIES TO TAKE PLACE IN THE AREA.

ATTACHMENT 7

Response to Outstanding Issue 96 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluat on Report

Draft SER Section 12.5.2: Types, Numbers, and Specifications for Portable and Laboratory HP Instruments (Excerpt)

The number and types of survey equipment, the sensitivity and range, and details of calibration are needed to complete the staff's review in this area, and the applicant has committed to provide the information.

Response:

Figure 1 (attached) provides an example of the general type and approximate quantity of portable and laboratory health physics equipment available at BVPS-1 as of April 19, 1984. This table demonstrates that Duquesne Light Company is fully cognizant of the types and numbes of equipment required to conduct an effective health physics program.

Figure 2 (attached) provides a tabulation of the general types of portable and laboratory equipment which are expected to be employed for radiological monitoring at BVPS-2.

The standard review plan provides no quantitative acceptance criteria for determining the necessary types and quantities of instrumentation required to support a successful health physics program. With continual improvements in technology, industry practices, and regulatory requirements, it is not possible to provide specific acceptance criteria, nor is it appropriate to provide a listing of the types and quantities in the FSAR.

Duquesne Light Company will maintain health physics equipment required to perform radiation and contamination surveys, airborne radioactivity monitoring and sampling, area radiation monitoring, and personnel monitoring during normal operation, anticipated operational occurrences, and accident conditions at BVPS-2. The types and quantities of equipment to be employed at BVPS-2 will be continually changing based upon experience in order to improve the efficiency and effectiveness of the health physics program.

PORTABLE SURVEY INSTRUMENTS

TYPE	METER RANGE	SENSITIVITY/EFFICIENCY	LINEARITY	CALIBRATION	NUMBER
G-M PANCAKE (FRISKER)	0-50,000 CPM 0-60,000 CPM	Sr-90,Y-90(E_{MAX}.54-2.2MeV) 45% Tc-99(E_{MAX}.29MeV) 30% C-14 (E_{MAX}.15MeV) 10% Co-60 5000 CPM/mR/hr Cs-137 3500 CPM/mR/hr	WITHIN ±5% FULL SCALE WITHIN ±5% FULL SCALE	SEMIANNUAL SEMIANNUAL	104 9
G-M LOW RANGE	0-200 mR/hr	WITHIN ±20% 40 KeV-1.25 MeV Cs-137 1200 CPM/mR/hr	WITHIN ±5% FULL SCALE ±2% TYPICAL	SEMIANNUAL	25
G-M HIGH RANGE	0-20 R/hr	Co-60 19 CPM/mR/hr Cs-137 12 CPM/mR/hr	WITHIN ±5% FULL SCALE ±2% TYPICAL	SEMIANNUAL	9
G-M COMBINATION	PROBE: 0-200 mR/hr INTERNAL: 0-2 R/hr	Cs-137 1200 CPM/mR/hr Cs-137 100 CPM/mR/hr	0-20 mR/hr RANGES ±8% 0-200 mR/hr RANGE ±15% 0-2 R/hr RANGE ±10%	SEMIANNUAL	10
G-M EXTENDIBLE	0-1000 R/hr	80 KeV-200 KeV ±15% 0.2 MeV-2 MeV ±10%	WITHIN ±10%	SEMIANNUAL	16
G-M PORTABLE	LOW RANGE 0-200 mR/hr MID RANGE 0-200 R/hr HIGH RANGE 0-10000 R/hr	1200 CPM/mR/hr 1200 CPM/mR/hr 60 KeV-1.3 MeV	WITHIN ±5% FULL SCALE ±2% TYPICAL ±25% OVER 4 DECADE RANGE	SEMIANNUAL	19
ION CHAMBERS	0-5 R/hr	γ ±15% 12KeV-1.3MeV Sr-90, Y-90 75% AT 40 cm WINDOW OPEN 8% AT 40 cm SLIDE CLOSED	WITHIN ±5% FULL SCALE	SEMIANNUAL	19
ION CHAMBERS	0-50 R/hr	γ ±15% 12K-γ-1.3MeV Sr-90, Y-90 75% AT 40 cm SLIDE OPEN 8% AT 40 cm SLIDE CLOSED	WITHIN ±5% FULL SCALE	SEMIANNUAL	55
ION CHAMBER EXTENDIBLE	0-1.999 R/hr 0-199.9 R/hr 0-19,990 R/hr	60 KeV-1.3 MeV ±20%	WITHIN 10% FULL SCALE	SEMIANNUAL	5

(FIGURE 1)

PORTABLE SURVEY INSTRUMENTS (cont'd.)

TYPE	METER RANGE	SENSITIVITY/EFFICIENCY	LINEARITY	CALIBRATION	NUMBER
ION CHAMBER	0-10,000 R/hr	60 KeV-1.3 MeV ±20%	±5% FULL SCALE	SEMIANNUAL	7
ALPHA SCINTILLATION	COUNT RATE MODE: 0-10,000 CPM SCALER MODE: 6 DIGIT	Pu-239 9 CPM/DPM/cm^2	±13% FOR LOW COUNT RATES	SEMIANNUAL	3
ALPHA GAS FLOW	0-500,000 CPM	50% OF 2π GEOMETRY FROM 50 cm (Pu-239)	±8% FULL SCALE IN WHICH IT IS READING	SEMIANNUAL	7
NEUTRON COUNTER	0.2-20 rem/hr	109 CPM/mrem/hr	±8% FULL SCALE IN WHICH IT IS READING	SEMIANNUAL	6

LABORATORY INSTRUMENTS

TYPE	DETECTION RANGE	MINIMUM DETECTABLE ACTIVITY	CALIBRATION	NUMBER
SINGLE-CHANNEL ANALYZER	6 DIGIT SCALER	8.7×10^{-10} μCi/cc (I-131) FOR 20 FT^3 SAMPLE	SEMIANNUAL	1
MULTI-CHANNEL ANALYZER	1.6×10^7 CPS	1×10^{-7} μCi/cc (Co-60) FOR 30 MIN. COUNT	ANNUAL	1
GAS FLOW PROPORTIONAL COUNTER	6 DIGIT SCALER	1.5 DPM (Sr-90, Y-90)	SEMIANNUAL	2
N. I (Tl)	6 DIGIT SCALER	7.0×10^{-7} μCi/ml (Co-60)	SEMIANNUAL	4
GM	6 DIGIT SCALER	48 DPM (Tc-99)	SEMIANNUAL	2
ALPHA SCINTILLATION	6 DIGIT SCALER	1.35 DPM (Pu-239)	SEMIANNUAL	2

(FIGURE 1 CONT'D)

PORTABLE CONTINUOUS AIR MONITORS

TYPE	RANGE	EFFICIENCY	CALIBRATION	NUMBER
G-M	0-50,000 CPM	75%, 2π Sr-90, Y-90	SEMIANNUAL	11
G-M	0-100,000 CPM	50%, 2π Sr-90, Y-90	SEMIANNUAL	14

PORTABLE AIR SAMPLERS

TYPE	FLOW	CALIBRATION	NUMBER
GRAB-SAMPLERS	CONSTANT: 2 CFM	SEMIANNUAL	36
	VARIABLE: 0-3 CFM	SEMIANNUAL	49
HIGH VOLUME	20-30 CFM	SEMIANNUAL	8
BREATHING ZONE	2 LPM	SEMIANNUAL	61

RESPIRATORY PROTECTION EQUIPMENT

TYPE	DESCRIPTION	NUMBER
AIR-PURIFYING	FULL FACEPIECE (NP)	1200
	FULL FACEPIECE (PP)	15
ATMOSPHERE SUPPLYING	SCBA OPEN CIRCUIT (PD)	13
	SCBA CLOSED CIRCUIT (RD)	18
AIR-LINE	FULL FACEPIECE (PD)	30
	FULL FACEPIECE (CF)	15
	HOOD (CF)	110

NP - NEGATIVE PRESSURE; PP - POSITIVE PRESSURE; PD - PRESSURE DEMAND
RD - RECIRCULATING DEMAND; CF - CONSTANT FLOW

(FIGURE 1 CONT'D)

PORTABLE SURVEY INSTRUMENTS

TYPE	METER RANGE (APPROX)	SENSITIVITY/EFFICIENCY (APPROX)
G-M PANCAKE (FRISKER)	0-50,000 CPM 0-60,000 CPM	Sr-90,Y-90(E_{MAX}.54-2.2MeV) 45% Tc-99(E_{MAX}.29MeV) 30% C-14 (E_{MAX}.15MeV) 10% Co-60 5000 CPM/mR/hr Cs-137 3500 CPM/mR/hr
G-M LOW RANGE	0-200 mR/hr	WITHIN ±20% 40 KeV-1.25 MeV Cs-137 1200 CPM/mR/hr
G-M HIGH RANGE	0-20 R/hr	Co-60 19 CPM/mR/hr Cs-137 12 CPM/mR/hr
G-M COMBINATION	PROBE: 0-200 mR/hr	Cs-137 1200 CPM/mR/hr
	INTERNAL: 0-2 R/hr	Cs-137 100 CPM/mR/hr
G-M EXTENDIBLE	0-1000 R/hr	80 KeV-200 KeV ±15% 0.2 MeV-2 MeV ±10%
G-M PORTABLE	LOW RANGE 0-200 mR/hr MID RANGE 0-200 R/hr HIGH RANGE 0-10000 R/hr	1200 CPM/mR/hr 1200 CPM/mR/hr 60 KeV-1.3 MeV
ION CHAMBERS	0-5 R/hr	γ±15% 12KeV-1.3MeV Sr-90, Y-90 75% AT 40 cm WINDOW OPEN 8% AT 40 cm SLIDE CLOSED
ION CHAMBERS	0-50 R/hr	γ ±15% 12KeV-1.3MeV Sr-90, Y-90 75% AT 40 cm SLIDE OPEN 8% AT 40 cm SLIDE CLOSED
ION CHAMBER EXTENDIBLE	0-1.999 R/hr 0-199.9 R/hr 0-19,990 R/hr	60 KeV-1.3 MeV ±20%
ION CHAMBER	0-10,000 R/hr	60 KeV-1.3 MeV ±20%
ALPHA SCINTILLATION	COUNT RATE MODE: 0-10,000 CPM SCALER MODE: 6 DIGIT	Pu-239 9 CPM/DPM/cm^2
ALPHA GAS FLOW	0-500,000 CPM	50% OF 2π GEOMETRY FROM 50 cm (Pu-239)
NEUTRON COUNTER	0.2-20 mrem/hr	109 CPM/mrem/hr

LABORATORY INSTRUMENTS

TYPE	DETECTION RANGE (APPROX)	MINIMUM DETECTABLE ACTIVITY (APPROX)
SINGLE-CHANNEL ANALYZER	6 DIGIT SCALER	8.7×10^{-10} μCi/cc (I-131) FOR 20 FT^3 SAMPLE
MULTI-CHANNEL ANALYZER	1.6×10^7 CPS	1×10^{-7} μCi/cc (Co-60) FOR 30 MIN. COUNT
GAS FLOW PROPORTIONAL COUNTER	6 DIGIT SCALER	1.5 DPM (Sr-90, Y-90)
NaI (Tl)	6 DIGIT SCALER	7.0×10^{-7} μCi/ml (Co-60)
GM	6 DIGIT SCALER	48 DPM (Tc-99)
ALPHA SCINTILLATION	6 DIGIT SCALER	1.35 DPM (Pu-239)

(FIGURE-2)

PORTABLE CONTINUOUS AIR MONITORS

TYPE	RANGE (Approx)	EFFICIENCY (Approx)
G-M	0-50,000 CPM	75%, 2π Sr-90, Y-90
G-M	0-100,000 CPM	50%, 2π Sr-90, Y-90

PORTABLE AIR SAMPLERS

TYPE	FLOW (Approx)
GRAB-SAMPLERS	CONSTANT: 2 CFM
	VARIABLE: 0-3 CFM
HIGH VOLUME	20-30 CFM
BREATHING ZONE	2 LPM

RESPIRATORY PROTECTION EQUIPMENT

TYPE	DESCRIPTION
AIR-PURIFYING	FULL FACEPIECE (NP)
	FULL FACEPIECE (PP)
ATMOSPHERE SUPPLYING	SCBA OPEN CIRCUIT (PD)
	SCBA CLOSED CIRCUIT (RD)
AIR-LINE	FULL FACEPIECE (PD)
	FULL FACEPIECE (CF)
	HOOD (CF)

NP - NEGATIVE PRESSURE; PP - POSITIVE PRESSURE; PD - PRESSURE DEMAND
RD - RECIRCULATING DEMAND; CF - CONSTANT FLOW

(FIGURE 2 CONTD)

ATTACHMENT 8

Response to Outstanding Issue 97 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 12.5.3: Training/Retraiing for Health Physics Professionals and Verification that Contractor Training Meets 10CFR19.12 (Excerpt)

Additional infc:mation regarding training for health physics professionals and requalification and retraining programs has been requested (Q471.5), but the applicant has not provided a satisfactory response. Additionally, the applicant should verify that contractor training is in compliance with 10CFR19.12 and not merely task oriented.

Response:

Although no regulatory requirements exist for specific training or retraining of health physics professionals, Duquesne Light Company does provide professional development training for appropriate individuals to assure a proficient health physics staff. This training is accomplished through participation in training programs, seminars, or workshops sponsored by various industry and professional groups. Participation in these programs maintains the health physics staff's level of knowledge current with changes in the industry resulting from technological innovations and developments as well as those resulting from changing regulatory requirements. Appropriate information obtained through participation in such training may then be incorporated as improvements in the health physics program.

With regard to 10CFR19.12, all individuals working in or frequenting any portion of a restricted area receive the instruction delineated in 10CFR19.12.

ATTACHMENT 9

Technical Specifications

The attached draft technical specifications are provided in support of the following statements found in the Draft SER.

a. "Airborne radioactive monitors will be calibrated at regular time intervals as required in technical specifications." (SER 12.3.4.2)

b. "In the technical specifications, the ROC should be confirmed to be a member of the station's onsite safety committee." (SER 12.5.1)

RADIATION MONITORING SYSTEM SURVEILLANCE

Instrument	Channel Check	Channel Calibration	Channel Functional Test	Source Check
1. Area Monitors				
a. Fuel Pool Area 2RMF-RQ1202	S	R	M	D
b. Containment 2RMR-RQ1201	S	R	M	D
2. Airborne Monitors				
a. Fuel Building Vent 2RMF-RQ1301	S	R	M	D
b. Containment 2RMR*RQ1303A,B,C	S	R	M	D
3. Process Monitors (Gaseous)				
a. Containment Purge Exhaust 2HVR*RQ1104A,B	S	R	M	D
b. Leak Collection Ventilation 2RMR-RQ1301	S	R	M	D

6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility and Radiation Protection staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the Radiological Operations Coordinator who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and the Shift Technical Advisor who shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and response analysis of the plant for transients and accidents.

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Director Nuclear Division Training and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR Part 55.

6.4.2 A Training Program for the Emergency Squad shall be maintained under the direction of the Director Nuclear Division Training and shall meet or exceed the requirements of Section 27 of the NEPA Code-1976.

6.5 REVIEW AND AUDIT

6.5.1 Onsite Safety Committee (OSC)

FUNCTION:

6.5.1.1 The OSC shall function to advise the Station Superintendent on all matters related to nuclear safety.

COMPOSITION:

6.5.1.2 The OSC shall be composed of the:

Chairman:	Chief Engineer
Member:	Senior Licensed Operator
Member:	Radiation Control Foreman
Member:	Maintenance Engineer
Member:	Senior Engineer - Station Engineering
Member:	Senior Testing or Study Projects Coordinator
Member:	Shift Technical Advisor
Member:	Chemist
Member:	Quality Control Engineer