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2NRC-4-139

September 7, 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
Open Item Response

Gentlemen:

This letter forwards responses to the issues listed below. The following items are attached:

Attachment 1: Additional Information on Outstanding Issue 55 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 2: Response to Outstanding Issue 63 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 3: Response to Outstanding Issue 119 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

Attachment 4: Response to Outstanding Issue 155 of the Beaver Valley Power Station Unit No. 2 Draft Safety Evaluation Report

DUQUESNE LIGHT COMPANY

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

KAT/wjs
Attachment

SUBSCRIBED AND SWORN TO BEFORE ME THIS
7th DAY OF September, 1984.

Anita Elaine Reiter
Notary Public

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

A001
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COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF ALLEGHENY)

On this 11th day of September, 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

Additional Information on Outstanding Issue 55 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

During the June 29, 1984, meeting with the NRC, the NRC reviewer stated that the 3/30/84 Duquesne Light Company (DLC) response to this open item was unacceptable. DLC has re-evaluated this issue and will be installing the Westinghouse Owners Group (WOG) generic design modification to provide automatic reactor trip system actuation of the reactor trip breaker shunt trip attachments.

ATTACHMENT 2

Response to Outstanding Issue 63 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluatio. Report

Draft SER Section 7.3.3.8: Control Room Isolation (excerpt)

The applicant has indicated that the design of the control room and pressurization system is incomplete at this time. Based on its review of preliminary information, the staff has expressed a concern that the design, which is integrated into the current control room isolation and pressurization system, may not meet the requirements of GDC 5.

Response:

The Beaver Valley Power Station control room is provided with ventilation systems and a control room emergency bottled air pressurization system (C.R.E.B.A.P.S.). The control room is currently functioning to support the operation of Unit 1. A temporary wall isolates the construction on the Unit 2 side. Each side (Units 1 and 2) of the control room has an emergency ventilation system powered from the emergency busses of the associated unit. The design relationships among these systems have been reviewed and the interrelationship between Units 1 and 2 accounted for in the following manner:

The ventilation isolation dampers for each ventilation system are powered from the emergency busses on the corresponding unit. Control signals are provided from both units to isolate ventilation in the event of a control room isolation signal on either unit. The attached Figure 1 shows the control signal interrelationships and isolation methodology. In order to assure that the isolation dampers are shut when isolation is required, they will be shut when the associated unit enters mode 5 or 6 (cold shutdown or refueling). Thus, the dampers will be pre-positioned in their safety position in the event that redundant electric power is not available. Figures 2 and 3 (attached) show the functional control relationships of the Beaver Valley Unit 2 control room ventilation system.

The CREBAPS volume is being enlarged as shown on Figure 4 to provide sufficient capacity to pressurize the combined control room. The isolation valves on the CREBAPS are powered by Unit 1. As in the case of the isolation dampers, control signals are provided from both units so that if initiation is required by either unit, pressurization air will be provided to the control room. In order to assure that redundant electrical power is available to these valves, transfer switches will be used to transfer the isolation valve power supply to Unit 2 if Unit 1 enters mode 5 or 6. By using "break-before-make" transfer switches, redundant power sources will be available to the valves at all times and yet the Unit 1 and 2 emergency power sources will remain independent.

By these means, the safety function of the control room ventilation and pressurization systems are maintained in all situations.

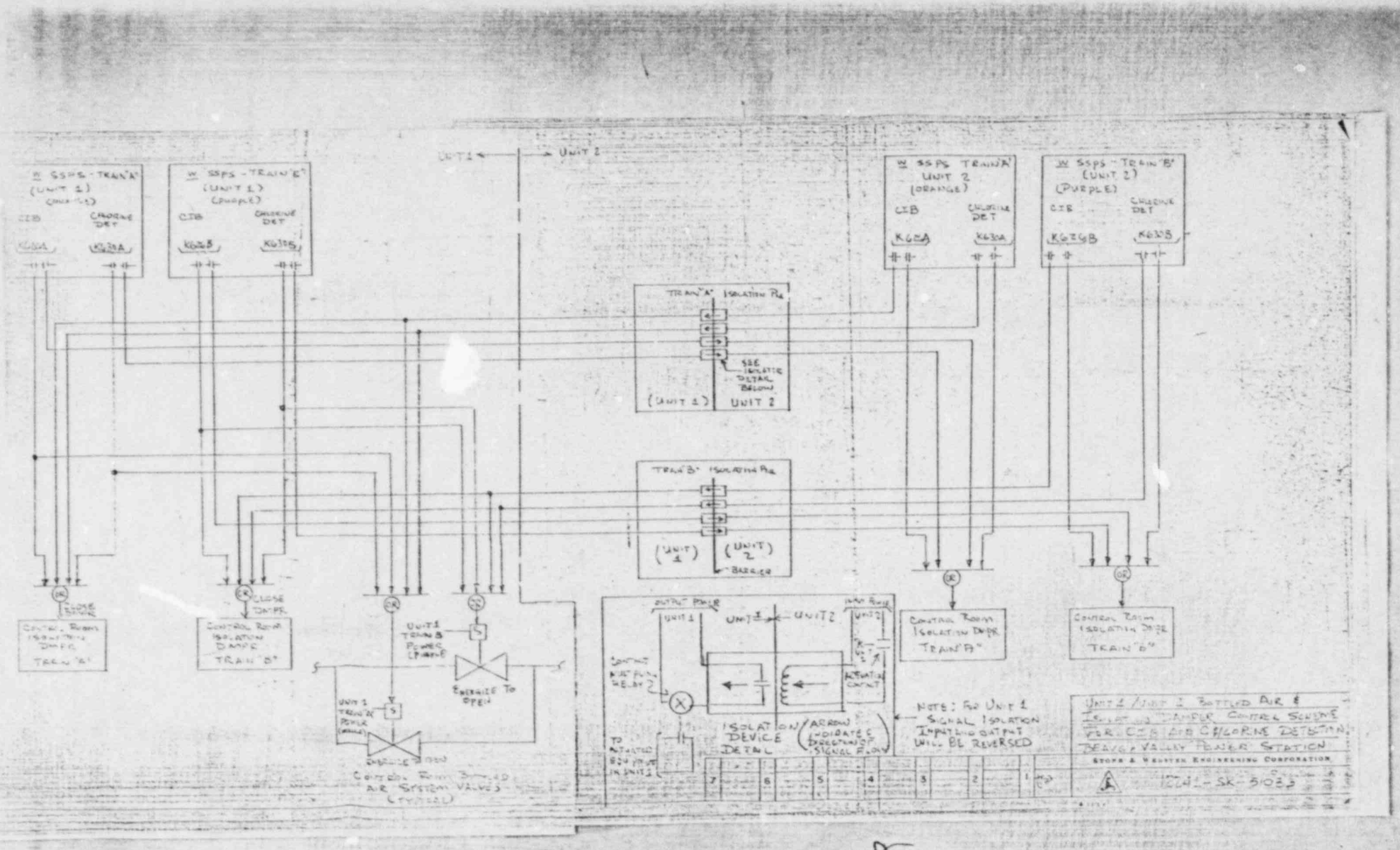

W SSPS - TRAIN 'A' (UNIT 1) (ORANGE)
W SSPS - TRAIN 'B' (UNIT 1) (PURPLE)
W SSPS TRAIN 'A' UNIT 2 (ORANGE)
W SSPS - TRAIN 'B' (UNIT 2) (PURPLE)
CIB
CHLORINE DET
K634A
K634B
K635A
K635B
UNIT 1
UNIT 2
TRAIN 'A' ISOLATION PNL
TRAIN 'B' ISOLATION PNL
SEE ISOLATION DETAIL BELOW
(UNIT 1)
(UNIT 2)
BARRIER
CLOSE DAMPER
CONTROL ROOM ISOLATION DAMPER TRAIN 'A'
CONTROL ROOM ISOLATION DAMPER TRAIN 'B'
UNIT 1 TRAIN 'B' POWER (PURPLE)
UNIT 1 TRAIN 'A' POWER (ORANGE)
ENERGIZE TO OPEN
ENERGIZE TO CLOSE
CONTROL ROOM BOTTLED AIR SYSTEM VALVES (TYPICAL)
OUTPUT PANEL
INPUT PANEL
CONTACT ACTUATED RELAY
ISOLATION DEVICE DETAIL
ARROW INDICATES DIRECTION OF SIGNAL FLOW
TO ANALYTICAL EQUIPMENT IN UNIT 1
NOTE: FOR UNIT 1 SIGNAL ISOLATION INPUTTING OUTPUT WILL BE REVERSED
UNIT 2 / UNIT 1 BOTTLED AIR & ISOLATION DAMPER CONTROL SCHEME FOR C.I.B. AIR CHLORINE DETECTION
BEAVER VALLEY POWER STATION
STONE & WEBSTER ENGINEERING CORPORATION
BVPS - SK - 5103

FIGURE 1

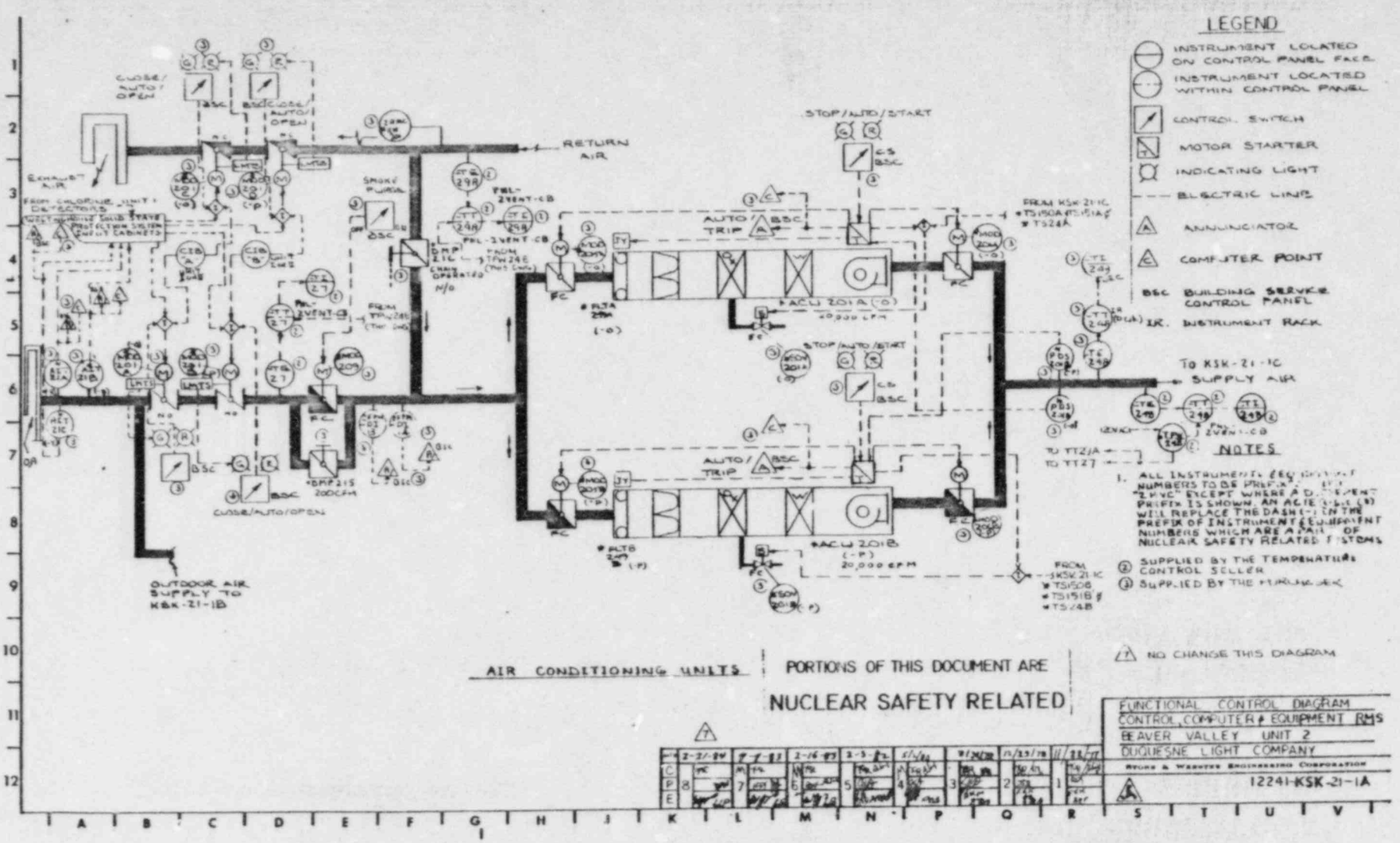

LEGEND
INSTRUMENT LOCATED ON CONTROL PANEL FACE
INSTRUMENT LOCATED WITHIN CONTROL PANEL
CONTROL SWITCH
MOTOR STARTER
INDICATING LIGHT
ELECTRIC LINE
ANNUNCIATOR
COMPUTER POINT
BSC BUILDING SERVICE CONTROL PANEL
IR. INSTRUMENT RACK
RETURN AIR
EXHAUST AIR
OUTDOOR AIR SUPPLY TO KSK-21-1B
SUPPLY AIR
AUTO/TRIP
STOP/AUTO/START
CLOSE/AUTO/OPEN
SMOKE PURGE
NOTES
1. ALL INSTRUMENT EQUIPMENT NUMBERS TO BE PREFIXED BY "2HVC" EXCEPT WHERE A DIFFERENT PREFIX IS SHOWN. AN ACTUAL (X) WILL REPLACE THE DASH (-) IN THE PREFIX OF INSTRUMENT EQUIPMENT NUMBERS WHICH ARE A PAIR OF NUCLEAR SAFETY RELATED SYSTEMS
② SUPPLIED BY THE TEMPERATURE CONTROL SELLER
③ SUPPLIED BY THE MANUFACTURER
AIR CONDITIONING UNITS
PORTIONS OF THIS DOCUMENT ARE
NUCLEAR SAFETY RELATED
NO CHANGE THIS DIAGRAM
FUNCTIONAL CONTROL DIAGRAM
CONTROL COMPUTER EQUIPMENT RMS
BEAVER VALLEY UNIT 2
DUQUESNE LIGHT COMPANY
STONE & WEBSTER ENGINEERING CORPORATION
12241-KSK-21-1A

FIGURE 2

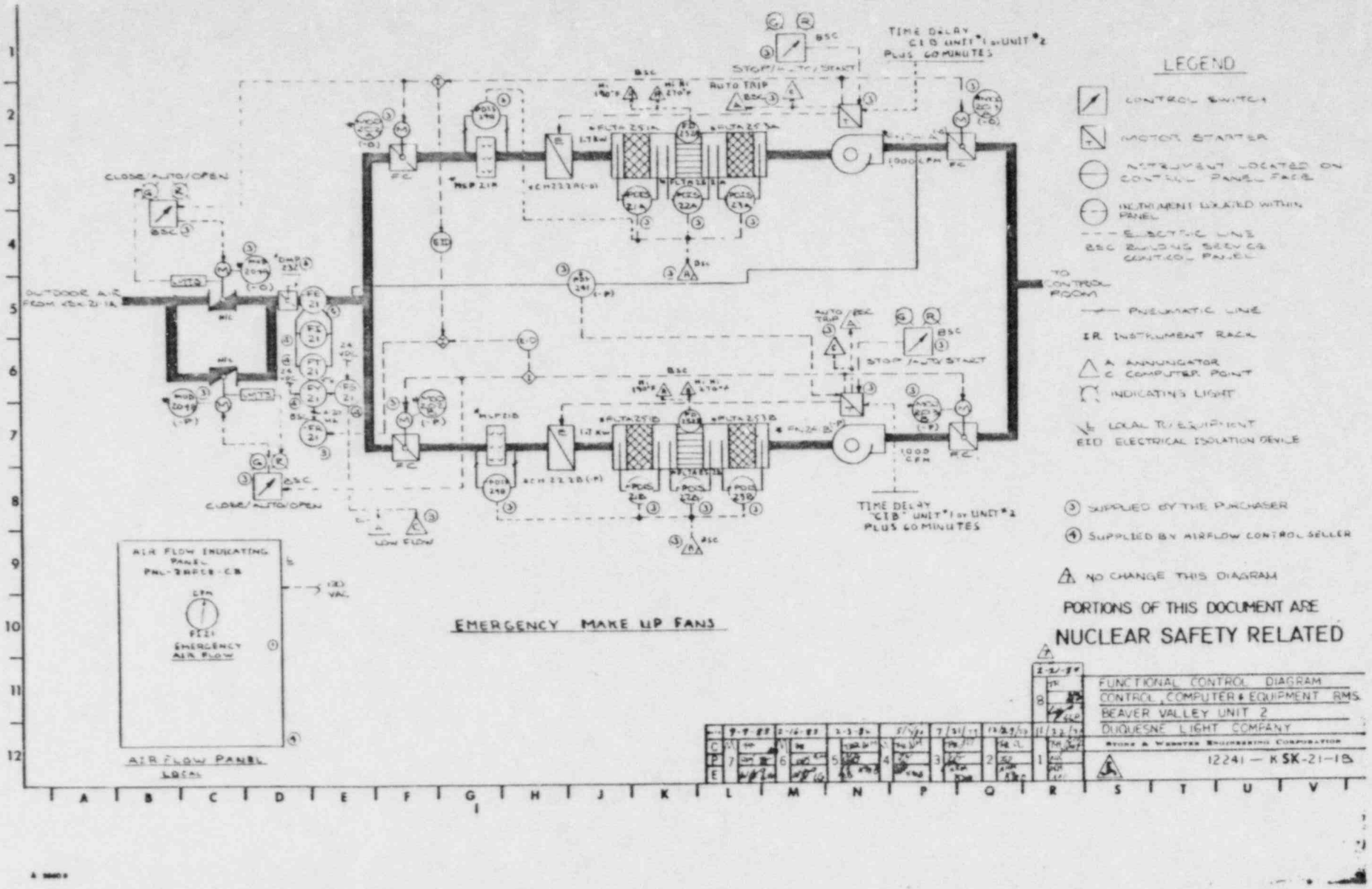
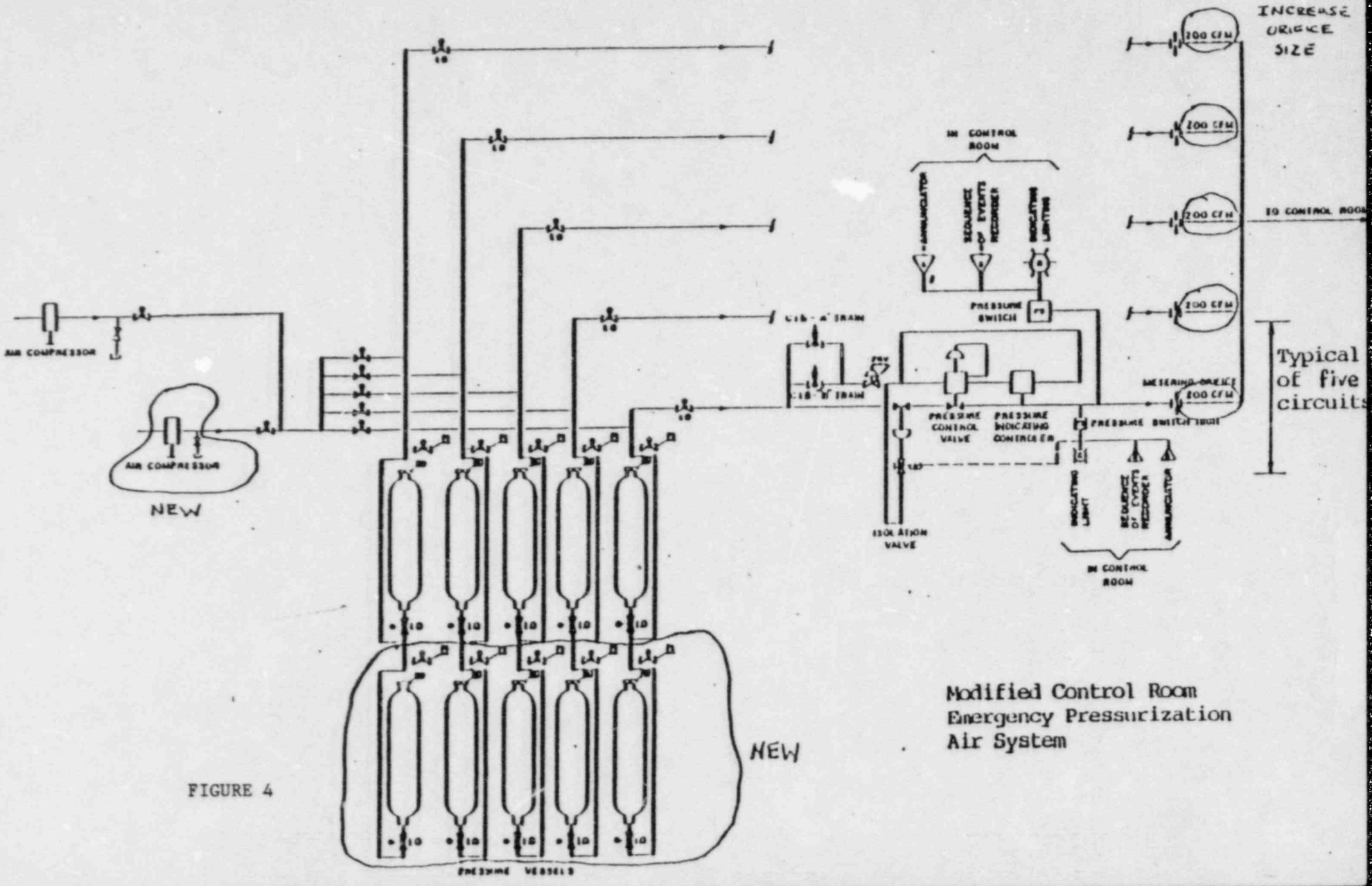

LEGEND
CONTROL SWITCH
MOTOR STARTER
INSTRUMENT LOCATED ON CONTROL PANEL FACE
INSTRUMENT LOCATED WITHIN PANEL
ELECTRIC LINE
BSC BUILDING SERVICES CONTROL PANEL
PNEUMATIC LINE
IR INSTRUMENT RACK
A ANNUNCIATOR
C COMPUTER POINT
INDICATING LIGHT
LOCAL TO EQUIPMENT
EID ELECTRICAL ISOLATION DEVICE
③ SUPPLIED BY THE PURCHASER
④ SUPPLIED BY AIRFLOW CONTROL SELLER
NO CHANGE THIS DIAGRAM
PORTIONS OF THIS DOCUMENT ARE
NUCLEAR SAFETY RELATED
EMERGENCY MAKE UP FANS
AIR FLOW INDICATING PANEL
AIR FLOW PANEL LOCAL
TIME DELAY "CIB" UNIT #1 or UNIT #2 PLUS 60 MINUTES
TO CONTROL ROOM
OUTDOOR AIR FROM SK-21-1A
CLOSE/AUTO/OPEN
STOP/AUTO/START
AUTO TRIP
LOW FLOW
1000 CFM
FUNCTIONAL CONTROL DIAGRAM
CONTROL, COMPUTER & EQUIPMENT RMS.
BEAVER VALLEY UNIT 2
DUQUESNE LIGHT COMPANY
STONE & WEBSTER ENGINEERING CORPORATION
12241 — KSK-21-1B

FIGURE 3



Modified Control Room
Emergency Pressurization
Air System

FIGURE 4

ATTACHMENT 3

Response to Outstanding Issue 119 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 6.5.1.3: Deviations from the Standard Review Plan (excerpt)

These items are deviations from Regulatory Guide 1.52, Revision 2, and are considered as "open items" requiring further evaluation by the applicant:

Section 1

Several paragraphs of IEEE-STD 279-1971 relating to testing of manual initiation and system status of protective systems have been deleted. The staff does not agree with the applicant that these design requirements can be deleted for ESF filter systems.

Section 2

The applicant has taken exception to the requirement that dampers used in contaminated air streams be designed to ANSI B31.1 (construction Class A dampers). Instead, these dampers will be designed only to meet the strength and leak tightness necessary for use in contaminated air streams. The staff considers this position acceptable except that dampers used for isolation and shutoff of contaminated air streams (either toxic chemical or airborne radioactive materials) should be construction Class A. The applicant should verify to the staff that all isolation and shutoff dampers in potentially contaminated airstreams are, in fact, construction Class A.

Section 3

The applicant has taken exception to the 10 hour per month filter purge, with heaters operational, to maintain the charcoal in an "accident ready" condition. Instead, the applicant considers 15 minutes all that is necessary to demonstrate operability and keep the charcoal free of moisture. The staff disagrees with the applicant. With regard to the conrol room pressurization system, the charcoal filters will normally be idle. Thus, during periods of high humidity and with dampers that do not seal 100%, water vapor by diffusion will enter the charcoal and possibly degrade its performance. Therefore, it is essential to periodically purge the charcoal filters with low humidity air for a duration (considered to be 10 hours) to maintain the charcoal dry and in an "accident ready" condition.

Response:

Section 1

As indicated by the revised Regulatory Guide 1.52 position presented in FSAR Section 1.8, Amendment 4, the Beaver Valley Power Station (BVPS) Unit 2 design is in accordance with the paragraphs of IEEE-STD 279-1971 relating to testing of manual initiation and system status of protective systems.

Section 2

Isolation dampers for control room and containment isolation are ASME III valves (which exceed the requirements of ANSI B31.1). Dampers in other potentially contaminated air streams are construction Class B. The system is designed to ensure that any leakage through the dampers is from the noncontaminated to the contaminated portion of the system and the flow is exhausted through the filters before being released to the atmosphere. Therefore, construction Class A dampers would not improve the safety of the plant.

Section 3

Duquesne Light Company (DLC) experience on BVPS-1 has indicated that no significant moisture buildup occurs with only 15 minutes per month operation on BVPS-1. DLC believes that running the system for 10 hours per month produces no significant benefit. Thus, no safety gain exists to counter the additional costs of down-time for filter replacement. Therefore, DLC believes that 15 minutes per month operation is sufficient to ensure filter operability.

ATTACHMENT 4

Response to Outstanding Issue 155 of the
Beaver Valley Power Station Unit No. 2
Draft Safety Evaluation Report

Draft SER Section 4.2.4.2: On-Line Fuel System Monitoring

The applicant shall provide information regarding the plant's on-line fuel rod failure detection methods to satisfy the guidelines described in Paragraph II.D.2 of SRP Section 4.2. The reactor coolant radiation monitors, which include high- and low-range off-line liquid monitors in the reactor coolant letdown line that can detect conditions that indicate fuel rod failure, are briefly mentioned in Sections 4.2.3.3 and 4.2.4.7 of the FSAR and are discussed in Sections 11.5.2.2 and 11.5.2.5.10 of the FSAR. The ability of the reactor coolant letdown radiation monitors to detect fuel rod failures needs to be confirmed along with the applicant's commitment to use these techniques to monitor failures as per SRP Section 4.2.

Response:

The reactor coolant letdown monitors are designed with a wide sensitivity range ([10^{-4} - 10^{4} uCi/g][see FSAR Table 11.5-2]) in order to have the capability to detect any significant variation in the reactor coolant letdown activity level. Should the fuel cladding fail, the rise in coolant activity will be rapidly detected by these monitors. The control room operators will be alerted to this rise by alarm and will be able to take the appropriate action. These monitors, along with the regular reactor coolant chemistry samples will provide adequate surveillance of reactor coolant activity to detect any fuel failures.