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ACCESSION NBR: 8404170243 DOC. DATE: 84/04/13 NOTARIZED: NO DOCKET #
 FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Public 05000528
 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Public 05000529
 STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Public 05000530

AUTH. NAME AUTHUR AFFILIATION
 VAN BRUNT, E.E. Arizona Public Service Co.
 RECIP. NAME RECIPIENT AFFILIATION
 KNIGHTON, G. Licensing Branch 3

SUBJECT: Forwards revised responses for Questions 1, 10 & 23 provided in util 830929 ltr, per 840320 telcon request. Questions pertain to fire-rated walls, fire hose stations & fire alarm/detection circuits.

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NOTES: Standardized plant. 05000528
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NRR/DSI/RSB 23	1	1	REG FILE 04	1	1
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EXTERNAL: ACRS 41	6	6	BNL (AMDTS ONLY)	1	1
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TO: DR. ROBERT M. WAYNE
FROM: DR. ROBERT M. WAYNE

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Arizona Public Service Company

P.O. BOX 21866 • PHOENIX, ARIZONA 85036

April 13, 1984

ANPP-29295 - WFQ/JYM

Director of Nuclear Reactor Regulation
Attention: Mr. George Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket Nos. STN-50-528/529/530
File: 84-056-026; G.1.01.10

Reference: (A) Letter from E. E. Van Brunt, Jr., APS, to G. W. Knighton,
NRC, ANPP-28331, dated December 1, 1983.
(B) Letter from E. E. Van Brunt, Jr., APS, to G. W. Knighton,
NRC, ANPP-27924, dated September 29, 1983.
(C) Letter from E. E. Van Brunt, Jr., APS, to G. W. Knighton,
NRC, ANPP-24091, dated June 15, 1983.

Dear Mr. Knighton:

Attached are revised responses for Questions #1, #10, and #23 provided in Attachment 2. This information is being provided in response to our March 20, 1983 conversation with Mr. D. Kubicki, of your staff. Attachment 3 provides our additional clarification to our Reference (B) response to Question 23.

Please contact me if you have any further questions.

Very truly yours,

E. E. Van Brunt

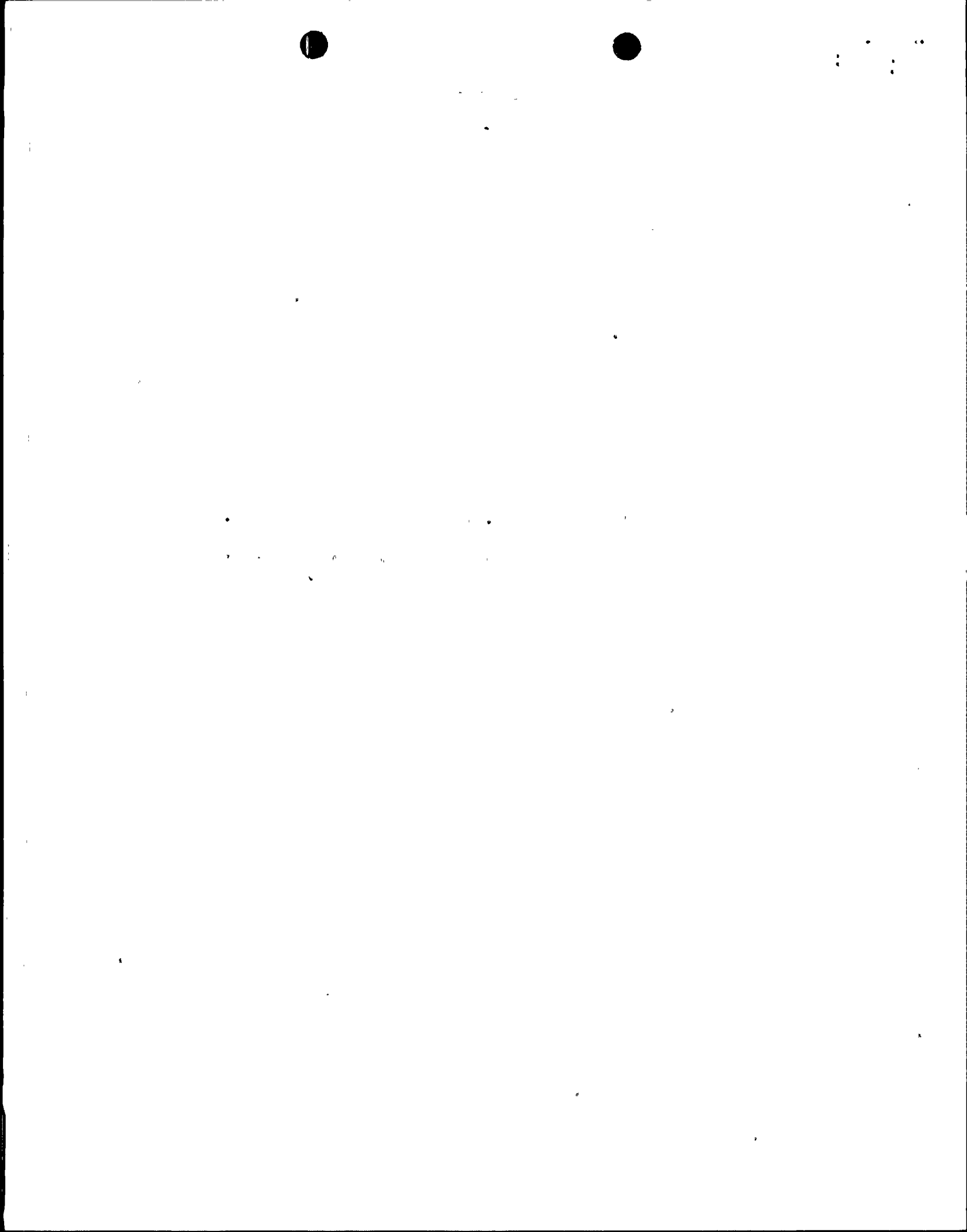
E. E. Van Brunt, Jr.
APS Vice President, Nuclear
ANPP Project Director

EEVB/JYM/sp
Attachment

cc: E. A. Licitra (w/a)
D. Kubicki "
A. C. Gehr "

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PDR ADOCK 05000528
PDR

Boo
|||



SECRET



VERIFICATION THAT INSTALLED FIRE
PROTECTION PLANT FEATURES SATISFY
PREVIOUS COMMITMENTS

Question 1:

Verify that doors in fire rated walls and partitions are listed for use in that type of wall or partition.

Response:

All fire doors are, or will be, labeled fire doors of the fire rating required for the wall rating, (i.e., 3 hour wall: A label, 3 hour door; 2 hour wall: B label, 1-1/2 hour door; 1 hour wall: C label, 3/4 hour door) with the exception of doors that have removable transoms and/or have both louver and glass view plates. The exceptions have been certified by the manufacturer (a) to be of UL or FM construction (but without label) offering the corresponding fire rating protection. These doors are listed in the accompanying table:

FIRE ZONE	DOOR #	WALL RATING	DOOR RATING	REMARKS
	F105	2 HR	B	WG&L
	F201	2 HR	B	WG&L
	A102	2 HR	B	RT
	A104	2 HR	B	RT/WG&L
	A110	2 HR	B	RT
	A118	2 HR	B	RT
(b)	A201	2 HR	B	RT
	A204	3 HR	B	RT
	A213	2 HR	B	RT
	A216	2 HR	B	RT
	A302	1 HR	C	WG&L
	A317	1 HR	C	WG&L
	A320	1 HR	C	WG&L
	A323	1 HR	C	WG&L
	A327	1 HR	C	WG&L
	A335	1 HR	C	WG&L
(c)	C111	1 HR	B	RT
	R107	2 HR	B	WG&L
	R121	2 HR	B	WG&L

where RT = removable transom
WG&L = wire glass and louver

Notes:

- (a) Fenestra letter, September 13, 1983, certifies that the series S6 doors (WG&L) supplied are made with construction, material and workmanship approved by UL for classification as 1-1/2 hour (B label) or 3/4 hour (C label) labeled doors. (See attachment 1).



1954

VERIFICATION THAT INSTALLED FIRE
PROTECTION PLANT FEATURES SATISFY
PREVIOUS COMMITMENTS

Page 2

(b) Door #A204 is not labeled, but is a hollow metal door constructed to general fire door standards. This door opening is in a concrete wall separating the Auxiliary Building, Zone 48, from the Radwaste Building, Zone 61C. The combustible loading in Zone 48 is 3 minutes, consisting of cable insulation, and Zone 61C is listed as "none" because there are essentially no combustibles in this zone. There is a monorail passing through the upper transom door, and there is a removable piece in the monorail to allow the double swinging transom door to close when the rail is not in use. There is no redundant safe shutdown equipment in either zone, and these areas are open and readily accessible for manual fire fighting. Automatic sprinklers will also be added above both sides of the door to prevent any possibility of fire passing from one zone to the other. This modification will be completed prior to fuel load.

(c) The center concrete dividing wall of the Main Steam Support Structure (MSSS) at levels 100 ft. to the roof is being reclassified from non-rated to one hour, with the following exceptions: a) Fire door C-111 at the 100 ft. level is a double swinging hollow metal fire door certified by the manufacturer to be constructed to 1-1/2 hour fire door standards. However, it has a removable transom bar and is slightly oversized, therefore, not labeled. b) The roof is supported by columns 8-1/2 ft. above the south, east, and center walls. The opening is for pressure venting in the event of a high energy line break. The opening is located high enough to prevent equipment from being exposed to direct flames or radiant heat through the heavy concrete barrier wall separating the north and south halves of the building. The north and south exterior walls of these rooms are vented to the atmosphere at the roof line, therefore, heat build-up and transfer by convection to the other half will be minimized.

The center wall is being upgraded to place the Atmospheric Dump Valves (ADV's) associated air supply lines and pneumatic actuators in separate fire areas. The train A electrical circuits are already protected by one hour thermolag insulation. There are four ADV's, two in each half of the building. There is a train A (protected) and a train B valve on each side of the central wall, and only one of the four valves is required for safe shutdown. The two ADV's in the northern half of the room are separated from the two in the southern half by approximately 40 ft. and the center one hour fire barrier wall. Levels 100 ft., 120 ft. and 140 ft. are fully protected by an automatic preaction water suppression system throughout. The above will assure that at least two of the ADV's will remain operable thus proving 100% redundancy under fire conditions.



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[The text in this section is extremely faint and illegible. It appears to be a list or a series of entries, possibly a table with multiple columns. The text is scattered across the middle and lower half of the page.]

Question 10:

To meet Section E.3 of BTP ASB 9.5-1, the applicant committed to equip hose stations with not more than 100 feet of fire hose. The applicant should verify that the existing hose stations will be able to protect all of the following areas with not more than 100 feet of hose:

- a. Zone 21/22 and 24
- b. Zone 74
- c. Zone 37

Response:

The PVNGS commitment to BTP APCSB 9.5-1 stipulated that no more than 100 ft of 1-1/2 inch hose would be used for interior hose stations. That commitment has been addressed in the following manner:

- a. Zones 21/22 and 24

Zones 23, 24, and 25 can be reached from hose station #90 (in the control building) which will be provided with a 150 foot length of hose. (The hose routing is not tortuous, and the flow resistance change from 100 feet to 150 feet is minimal. This exception to the PVNGS commitment to BTP APCSB 9.5-1 will be indicated in an upcoming FPER amendment).

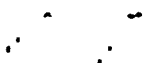
Additionally, APS will install another hose station #108 with 150 foot hose in the control building near the exit to the diesel building (see FPER Figure 2, column lines J4/JD). This hose will be able to reach Zones 21 and 22. Installation will be completed prior to fuel load. The FPER will be revised to show the new hose station in the next amendment.

- b. Zone 74

Main Steam Support Structure (MSSS) Zone 74 can be reached within all areas of the 100 foot (grade) level and 140 foot level from standpipe and hose stations at those levels located at the northwest corner of the turbine building. These hose reels will be equipped with 150 feet of 1-1/2 inch hose from hose station #63 (100 foot grade) and 100 feet of 1-1/2 inch hose from hose station #72 (140 foot grade). The 120 foot level of the MSSS is entirely an open grating and hose steams can be directed at all areas of that level upward from the 100 foot level and downward from the 140 foot level (which is also an open grating). The hose nozzles will reach within 30 feet of all areas of the building.

- c. Zone 37

All areas of Auxiliary Building, Zone 37, can be reached within 30 feet by a 150 foot of 1-1/2 inch hose from hose station #25. (Again, the hose station is not tortuous, and the change in flow resistance is minimal. This zone has only piping and normally contains no combustible material. This exception to PVNGS commitment to BTP APCSB 9.5-1 will be reflected in an upcoming FPER amendment).



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Question 23:

To comply with Section E.1 of BTP ASB 9.5-1, the applicant should clarify which fire alarm/detection circuits are Class A and Class B.

Response:

Plant Areas Protected by Detection Only

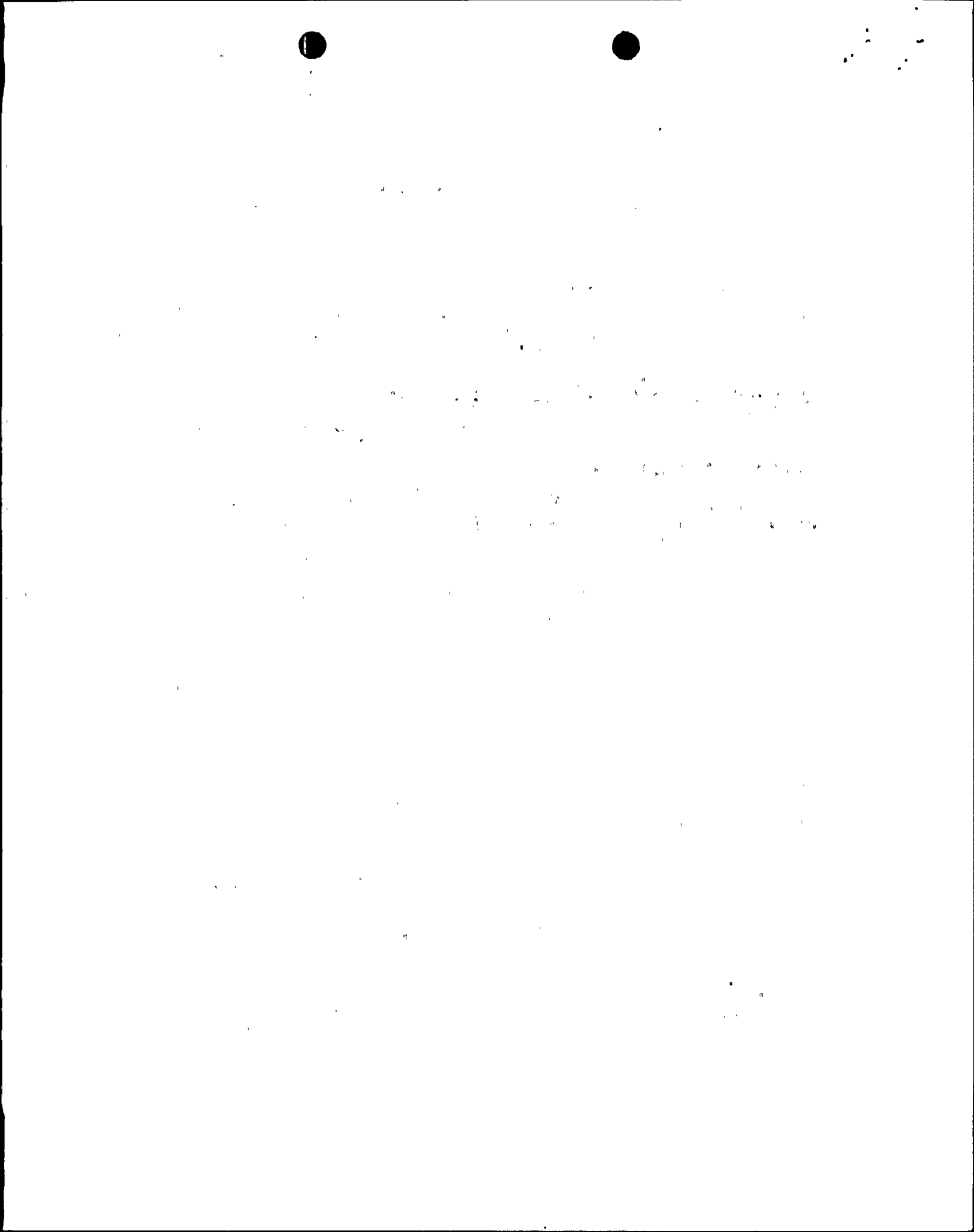
All wiring from the detectors to the local fire panels is Class "A". All wiring from the local fire panels to the Security System is Class "B". The Security System is Class "A".

Plant Areas Protected by Water Suppression, CO₂,

The initiating device circuits for the CO₂ systems protecting ESF switchgear rooms and battery rooms are Class "B" from the detectors to the local fire panel and from the fire panel to the security system remote terminal concentrator. However, there are two independent detection zones (circuits) serving each of these rooms. They are cross-zoned for actuation of the CO₂ System. If one zone experienced a trouble condition, operations personnel would be dispatched to investigate. The other zone would still be able to transmit a fire alarm signal to the control room. If a fire condition existed, the CO₂ system could be manually initiated to extinguish the fire from just outside the switchgear room. Since the switchgear and battery rooms are located in the control building, immediate response would be anticipated. The redundant trains and separate rooms are surrounded by three hour fire barriers. Portable extinguishers and manual hose stations equipped with Class "C" nozzles are also provided. Therefore, the installed detection and suppression systems meet the BTP APCSB 9.5-1 Appendix "A" "Guidelines for Specific Plant Areas", Item D.5 and D.7 switchgear and station battery rooms. In addition the cable trays in the switchgear rooms are adequately protected as described above, against a potential fire which might develop. In summary, failure of one detection zone will not prevent a fire alarm to the control room. Failure of the Class "B" circuit from the local control panel to the remote terminal concentrator will not prevent automatic actuation of the CO₂ suppression system.

The following water suppression systems are wired Class "A" from the local fire panel to the Security System. The signals that are wired Class "A" are the AC Power On, Water Flow, Alarm, and Trouble. In case of a Wet Pipe System, only the Water Flow switch is Class "A".

1. Fuel Bldg. Railroad Bay, El. 100', Zone 27
2. Upper Cable Spreading Room, El. 160' of Control Bldg., Zone 20
3. Lower Cable Spreading Room, El. 120' of Control Bldg., Zone 14
4. D.G. Rooms A & B, El. 100', Zone 21
5. D.G. Fuel Oil Day Tank Rooms, El. 131', Zone 131
6. Aux. Bldg. Systems, El 100', Zones 42C, 42D, & 46

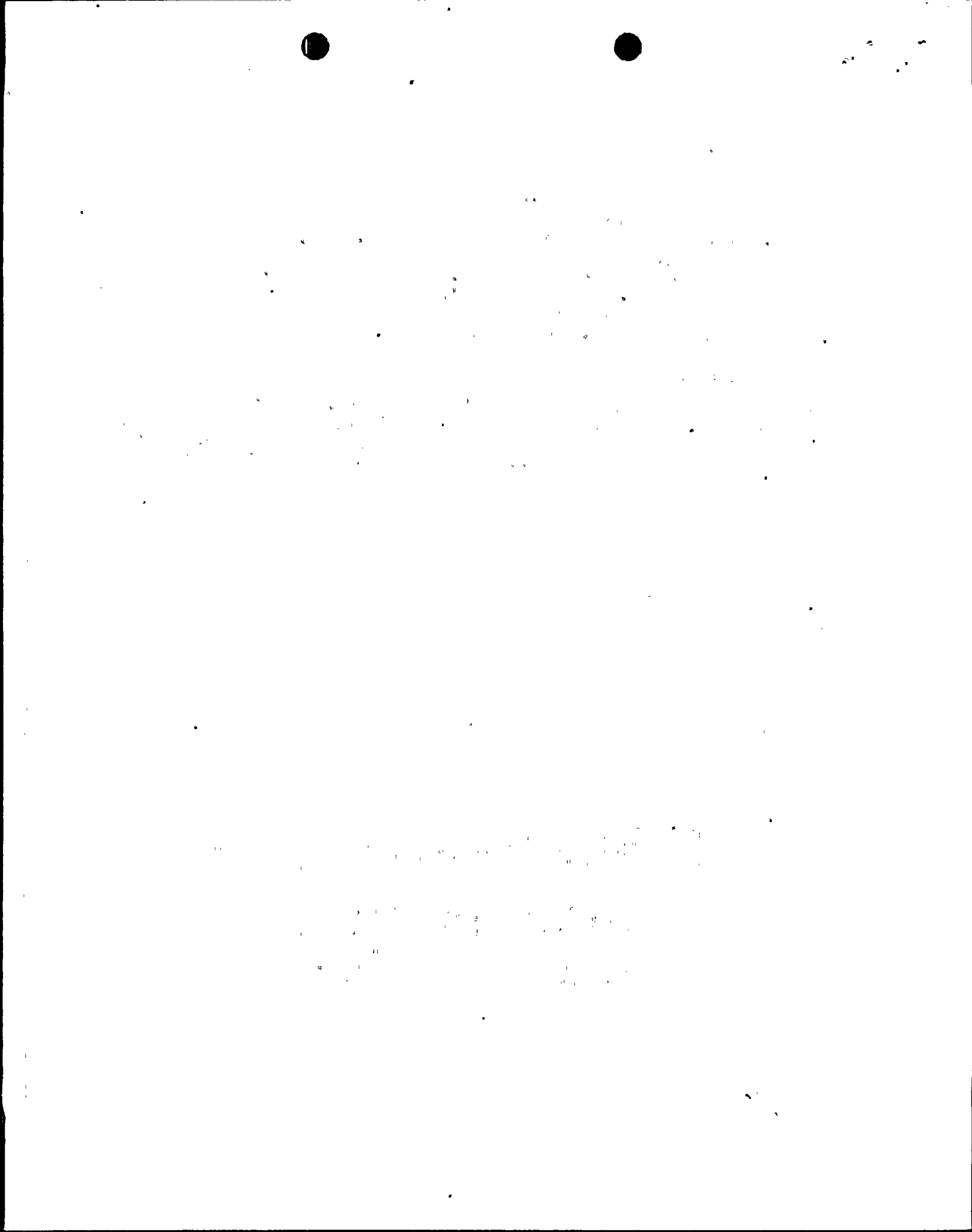


Question 23:
(Continued)

7. Electrical Penetration Rooms, C and B, El. 100', Zones 42A & 42B
8. Electrical Penetration Rooms, A and D, El. 120', Zones 47A & 47B
9. Aux. Bldg. Systems, El. 120', Zones 52A and 52D
10. Dead Space Compartments A and B. Areas between Control Bldg. and Aux. Bldg. El. 100' and 120'.
11. Turbine Driven Aux. Feed Pump, El. 80' of MSSS, Zone 72
12. MSSS, Zone 74, El. 100', 120', and 140'.

Fire Pump House

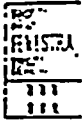
The diesel fire pumps have Class "A" circuits for indication to the Control Room. These are "Pump Running", "Controller Switch Off" or "Manual Position" "Controller Trouble" is Class "B". The Class "A" circuits for the motor driven fire pump are "Motor Running" and "Loss of Power".



Attachment 3

Clarification to ANPP-27924, dated September 29, 1983.

In Question 23, we listed a number of water suppression systems in safety related areas which are actuated by Class A detection systems. This might be interpreted that all of the water suppression systems in safety related areas are Class A. An exception to this is the Containment Spray, High Pressure Safety Injection (HPSI), and Low Pressure Safety Injection (LPSI) Pump Rooms which are actuated by Class B detection systems. The water suppression systems in these rooms are not required to meet BTP 9.5-1 Appendix A and 10CFR50 Appendix R safe shutdown requirements, because train A and B pumps are located in separate fire areas having 3 hour barriers. The suppression systems were installed for added safety and insurance purposes.



FENESTRA

FENESTRA CORPORATION
 4040 West 20th Street, P.O. Box 8189, Erie, PA 16505

814 / 838-2001 Telex 91-4465

September 13, 1983

BECHTEL POWER CORPORATION
 12400 East Imperial Highway
 Norwalk, California

ATTENTION: Mr. W.G. Bingham

RE: Arizona Nuclear Power Project
 Bechtel Job 10407
 Fenestra Job #: 49-5767
 Project #82-U395
 File: AM-070

Dear Mr. Bingham:

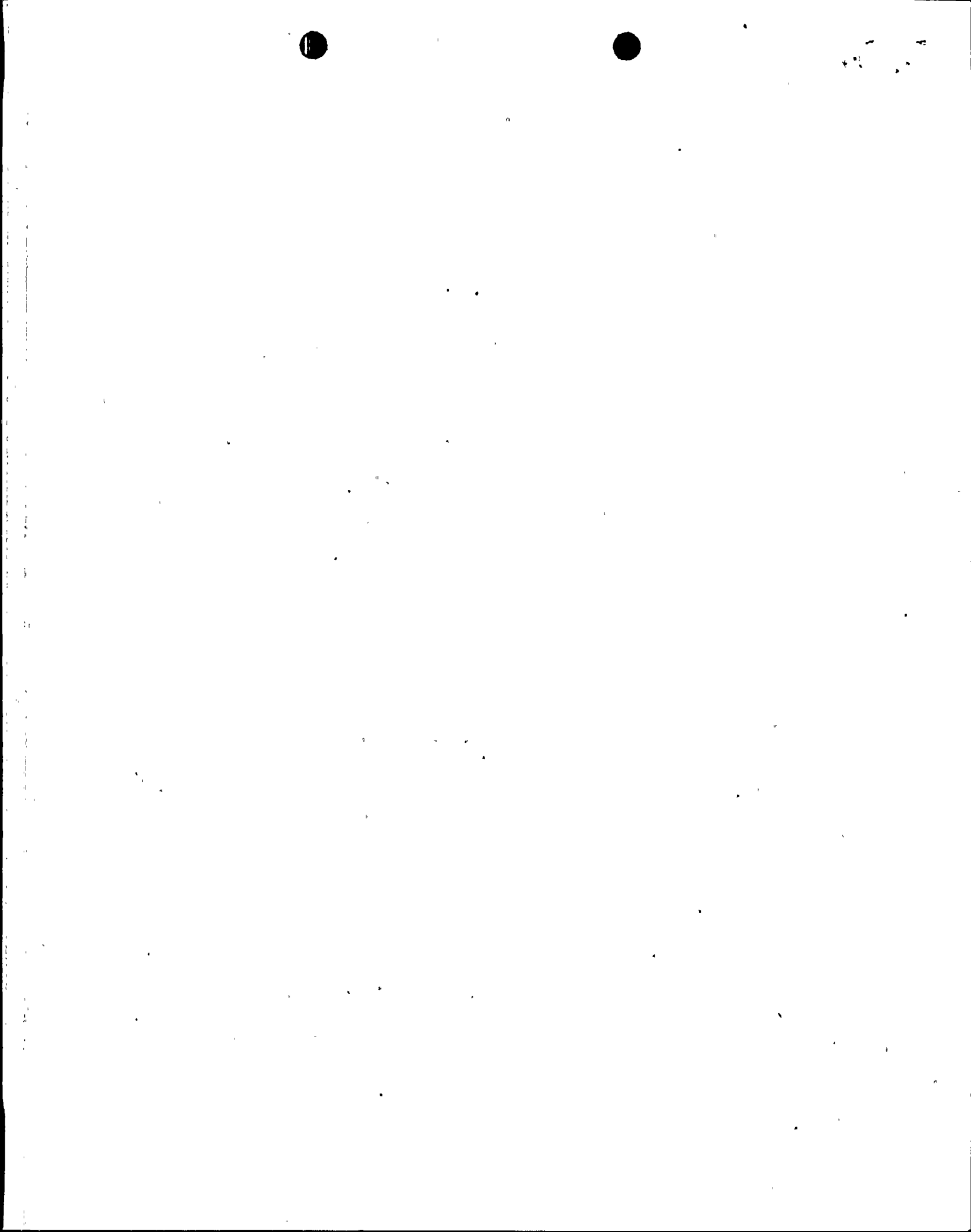
This letter certifies that the S6 Series doors, the frames and the transom panels, as supplied by Fenestra Corporation to the Palo Verde Nuclear Generating Station (PWNGS) under Specification 13-AM-070 for the doors listed below manufactured in accordance with the construction, materials and workmanship approved by Underwriters Laboratories (UL) or Factory Mutual (FM) for a classification as either 1½ hour (B) or ¾ hour (C) label.

Because of the special operational and access requirements, along with the ventilation considerations needed for this project, these assemblies included doors, removeable transoms, frames and/or vision lights and louvers, all of which exceeded listed sizes. The resultant designs fail to qualify for the FM and UL Fire Rating Label. However, the component materials manufactured by the Fenestra Corporation, which are used in these door assemblies, do meet the UL or FM construction requirements for the equivalent fire rating as certified above, provided that the installation is in accordance with the requirements of NFPA 80, Standards For Fire Doors and Windows, as applicable to Hollow Metal Doors, Frames and Hardware.

The affected door assemblies and corresponding equivalent fire ratings are as follows:

<u>DOOR NUMBER</u>	<u>EQUIVALENT FIRE RATING (HRS)</u>
A102	1-1/2
A104	1-1/2
A110	1-1/2
A115	1-1/2
A201	1-1/2
A204	1-1/2
A213	1-1/2
A215	1-1/2
A302	3/4
A317	3/4

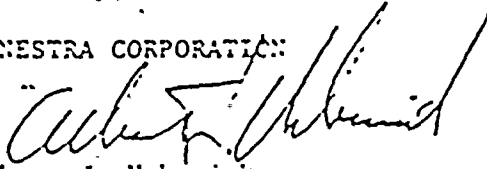
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<u>DOOR NUMBER</u>	<u>EQUIVALENT FIRE RATING (HRS)</u>
A320	3/4
A323	3/4
A327	3/4
A335	3/4
C111	1-1/2
F105	1-1/2
F201	1-1/2
R107	1-1/2
R121	1-1/2
J143	1-1/2

Sincerely,

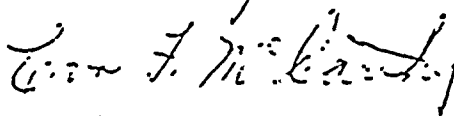
FENESTRA CORPORATION


Albert J. Urbaniak
Manager Research & Development

AJC/cy

cc: T. Kitcey

Sworn and subscribed to before me this 14th day of Sept 1983.



Tom F. McKeon, Notary Public
Millersburg, Tyoga, Erie County, Penna.
My Commission Expires June 03, 1985

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