



**Duquesne Light**

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December 21, 1982

Director of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Attn: Mr. Steven A. Varga, Chief  
Operating Reactors Branch No. 1  
Division of Licensing  
Washington, DC 20555

Reference: Beaver Valley Power Station  
Docket No. 50-334, License No. DPR-66  
Appendix R to 10 CFR 50 - Exemptions

Gentlemen:

By letter dated June 30, 1982, the Duquesne Light Company requested exemptions from Section III.G. of Appendix R to 10 CFR 50 for five fire areas. By letter dated October 22, 1982, we provided additional information with regards to the subject exemptions. The NRC's draft Safety Evaluation Report of these requests was received by Duquesne Light Company on November 30, 1982.

Based on the draft safety evaluation, the level of fire protection provided for the Reactor Containment (RC-1), Pipe Tunnel (PT-1), and Cable Tunnel (CV-3) was determined equivalent to the technical requirements of Section III.G of Appendix R and exemptions were granted by the NRC. The remaining areas for which an exemption was denied are:

- Control Room (CR-1)
- Primary Auxiliary Building; Elev. 722 (PAB)

Additionally, our proposal to use portable, gasoline powered fans as a means of providing essential ventilation in certain areas identified in the report was denied based on the determination that use of the portable ventilation equipment was considered a repair and not acceptable for hot shutdown related equipment.

Provided in the enclosure to this letter is information which will clarify and substantiate the subject exemptions. The information in this enclosure has been discussed with the NRC staff in conference calls held during December. We feel adequate documentation and technical justification is provided in the enclosure to establish our position that equivalent protection is provided or alternative methods are available and, therefore, should be acceptable. If the exemptions for the control room (CR-1), and PAB Elev. 722 (PA-1G), and our position on the portable ventilation to areas ES-1 and 2 (Emergency Switchgear Rooms 1 & 2), and areas PA-1g, 1h & 1f (charging pump cubicles), are not granted, or found acceptable in the light of alternate methods proposed and described in this letter, this correspondence should then be considered notification for an appeal by Duquesne Light Company.

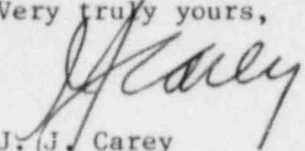
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Table I is provided to summarize all the proposed modifications and commitments made by DLC with referenced documents noted in the table for each item. Also, included in the table is the implementation schedule dates for the proposed modifications. The dates are consistent with our original Appendix R Review Report dated June 30, 1982, which was documented in Chapter 12 of the report. The applicable notes identified for each item provides justification and the basis for the proposed scheduled dates.

Please contact us if additional information or clarification is necessary.

Very truly yours,

  
J. J. Carey  
Vice President, Nuclear

Enclosures

cc: Mr. W. M. Troskoski, Resident Inspector  
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Beaver Valley Power Station  
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U. S. Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation  
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TABLE 1

<u>REFERENCE</u>	<u>PROPOSED MODIFICATION</u>	<u>IMPLEMENTATION SCHEDULE</u>
1. Section 6.2 (App. R Report)	** Auxiliary FW System: Install <u>new</u> Aux. FW Pump	30 months after NRC Approval (NOTE 3)
2. Section 6.11 (App. R. Report) and 12/10/82 letter to NRC	** (B.I.P) Backup Indication Panel Install new instrument panel in CV-2, East Cable Vault ** Add source range monitoring indication capability and $T_h$ & $T_c$ indication	30 months after NRC Approval (NOTES 2 & 3)
3. 12/10/82 letter to NRC	** Add local steam pressure indication at PORV area where manual control of steam pressure will be performed (per Alternate S.D. Procedure - Post fire shutdown.	30 months after NRC Approval (NOTES 2 & 3)
4. 10/28/82 letter to NRC	** Provide support cradles for main steam lines to support water solid operation (per alternate S.D. Procedure - Post fire shutdown)	30 months after NRC Approval (NOTE 3)
5. Section 6.9 (App. R Report)	* $CO_2$ Storage/PG Pump Room: Relocating river water valve MOV-RW-113D from this area	3: Refueling Outage (NOTE 7) (Scheduled June, 1983)
6. Section 6.10 (App. R Report)	* Normal Swgr. (NS-1), Cable Spreading (CS-1), Inst. Rack Room (CR-4), Relay (CR-3), Control Room Air Cond. Room (CR-2): Modifications of the #2 DG control circuit and wiring	18 months from NRC Approval (NOTES 1 & 7)
7. Section 6.12 (App. R Report)	* Motor Control Centers (480V) E-MCC's Modify circuits (provide current limiting devices for the control transformers).	3rd Refueling Outage (Scheduled June, 1983)

TABLE 1, (Continued)

<u>REFERENCE</u>		<u>PROPOSED MODIFICATION</u>	<u>IMPLEMENTATION SCHEDULE</u>
8. Section 6.8 (App. R Report)	*	Cable Tunnel (CV-3): Install Halon System	3rd Refueling Outage (NOTE 5) (Scheduled June, 1983)
9. Section 6.4 (App. R Report)	*	Charging Pump Cubicles (PA-1g, 1f, 1h) Install fire dampers between cubicles in the ductwork and seal B cubicle opening	12 months from NRC Approval (NOTES 4 & 6)
10. Sections 6.5 6.6 6.7 (App. R Report)	*	Portable ventilation capability for PA-1g, 1h, 1f ES-1 & 2 CR-2	3rd Refueling Outage (NOTE 8) (Scheduled June, 1983)
11. Draft SER from NRC dated 11/22/82	*	PAB Elev. 722 Install 1 hr. cable wrap on the B Charging Pump power lead	3rd Refueling Outage (NOTE 8) (Scheduled June, 1983)

Ref: 10 CFR 50 Appendix R

\* Alternative shutdown capability is provided by rerouting, relocating, or modification of existing systems.

\*\* Dedicated shutdown capability is provided by installing new structures and systems for the function of post-fire shutdown.

TABLE 1, (Continued)

NOTES:

1. The 18-month interval is for final design and procurement of the modification. Installation will be performed during the first outage following the 18-month design and procurement interval.
2. Installation requires an outage to perform instrument loop testing and verification.
3. Implementation in accordance with 10 CFR 50.48 (Scheduling for dedicated shutdown equipment).
4. Installation requires an outage to conform to ALARA constraints in high radiation areas.
5. Installation deferred to an outage to minimize construction activity in CV-3 during power operations.
6. Installation will be performed during the first refueling outage following the 12-month design and procurement interval.
7. Installation requires an outage as the modification will require the protracted outage of an emergency diesel generator.
8. Installation predicated upon NRC approval of proposed modification.

## ATTACHMENT I

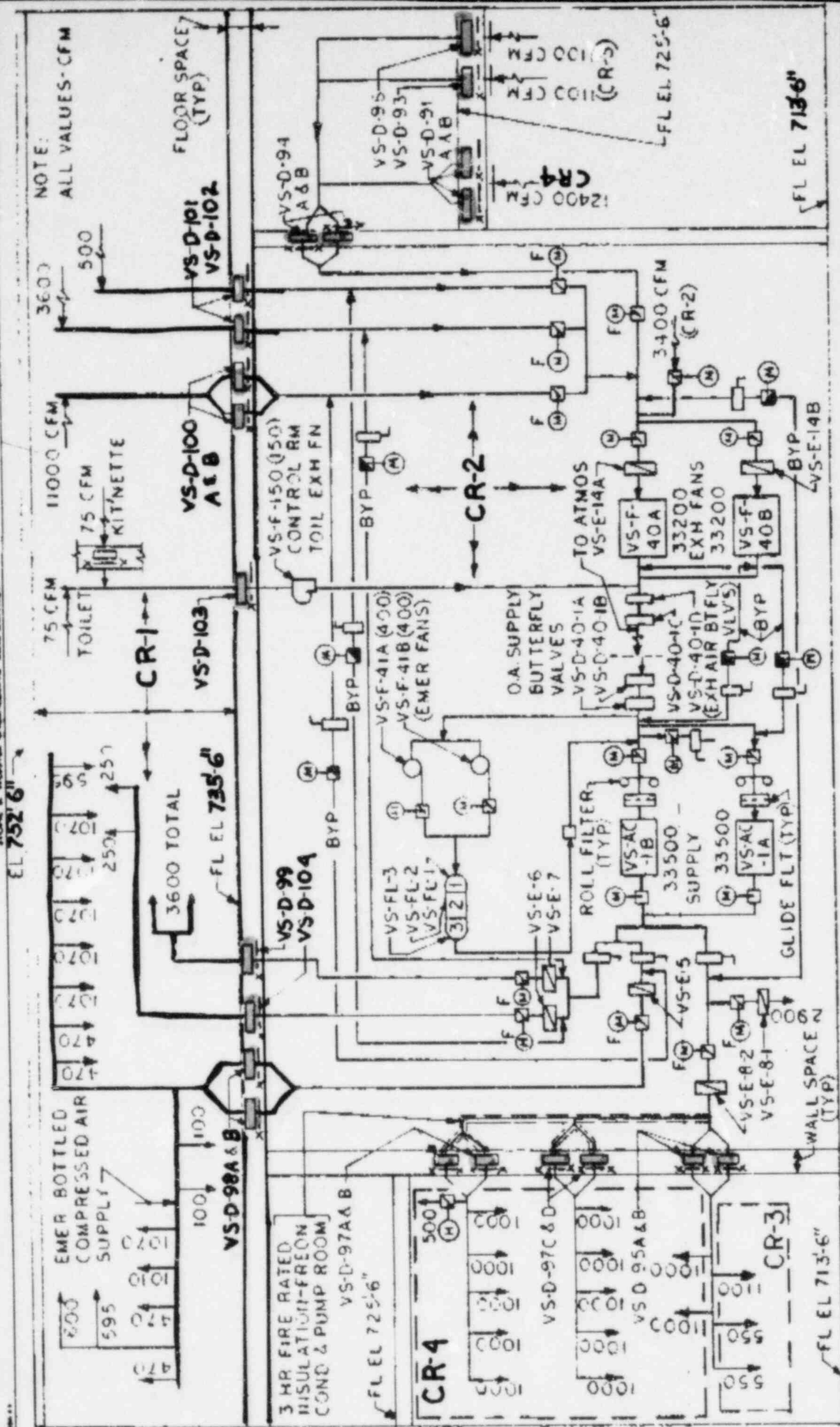
### Control Room (CR-1)

The exemption for the control room (CR-1) was denied because alternate shutdown capability independent of this area was not provided. This was resolved at the November 30, 1982 meeting between Duquesne Light Company and the NRC staff reviewers and documented in our December 12, 1982 letter. Whereby, the determination was made that the design capability to achieve cold shutdown using the water solid steam generator heat removal method could be accomplished in approximately 127 hours following reactor trip and that the availability of a water supply for the auxiliary feedwater system would be sufficient over this time period. Therefore, the control room (CR-1) does comply with Section III.G because provisions have been made for an alternate shutdown capability independent of the area.

The draft SER stated that physical isolation does not exist between the common ventilation duct work between the control room (CR-1) and area CR-4 (Process Instrument Room). A sketch of the ventilation duct work denoting fire-rated dampers is attached to show the automatic physical isolation capability between the control room and the surrounding perimeter areas.



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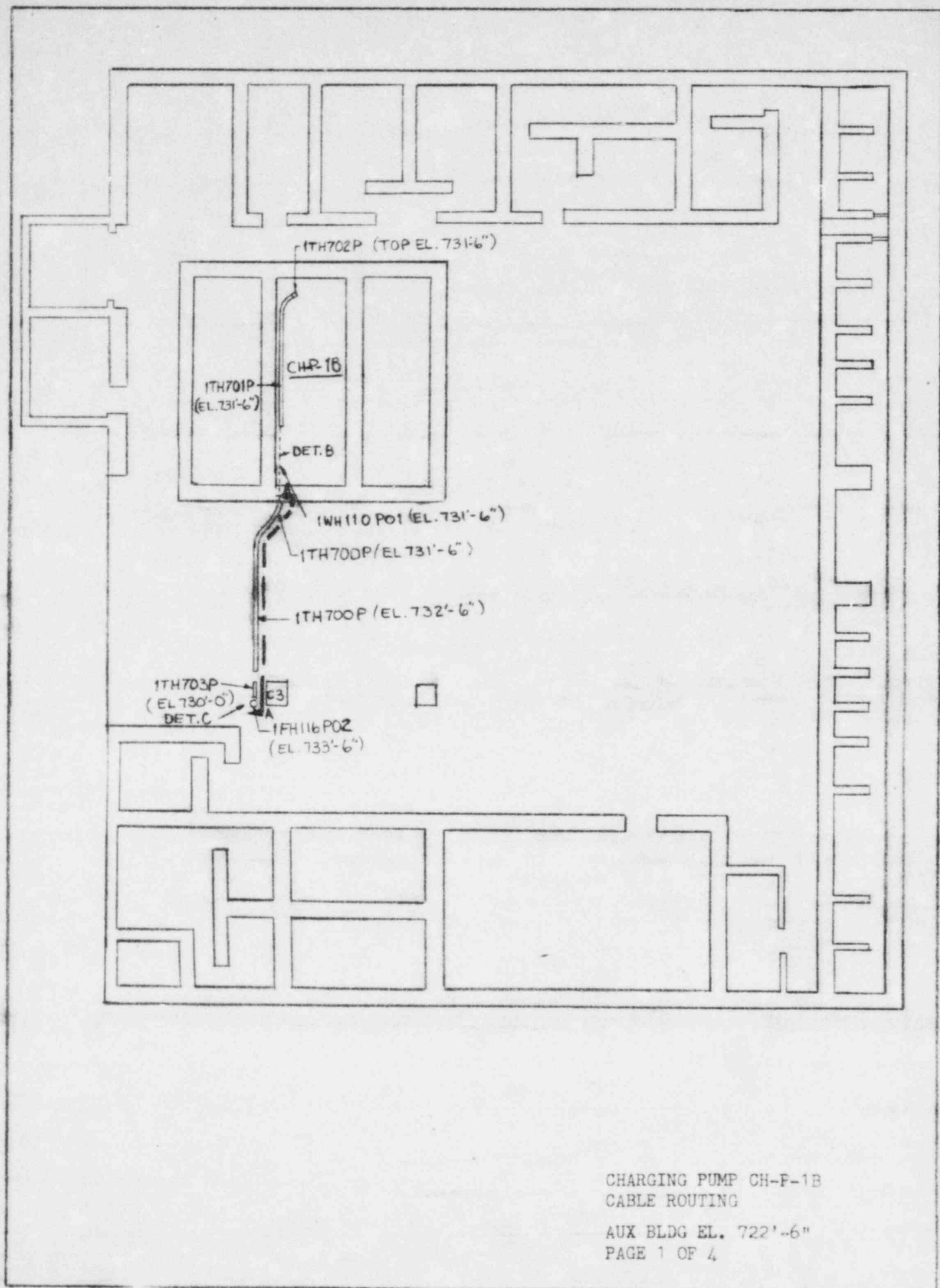


LEGEND:

- |                                     |                    |
|-------------------------------------|--------------------|
| <input checked="" type="checkbox"/> | ELEC HEAT COIL     |
| <input checked="" type="checkbox"/> | FIRE DMP-THRU WALL |
| <input type="checkbox"/>            | FIRE DMP-THRU FLR  |

VENTILATION - FIRE AREAS CR-1,2,3, & 4  
PHYSICAL LAYOUT-SERVICE BLDG

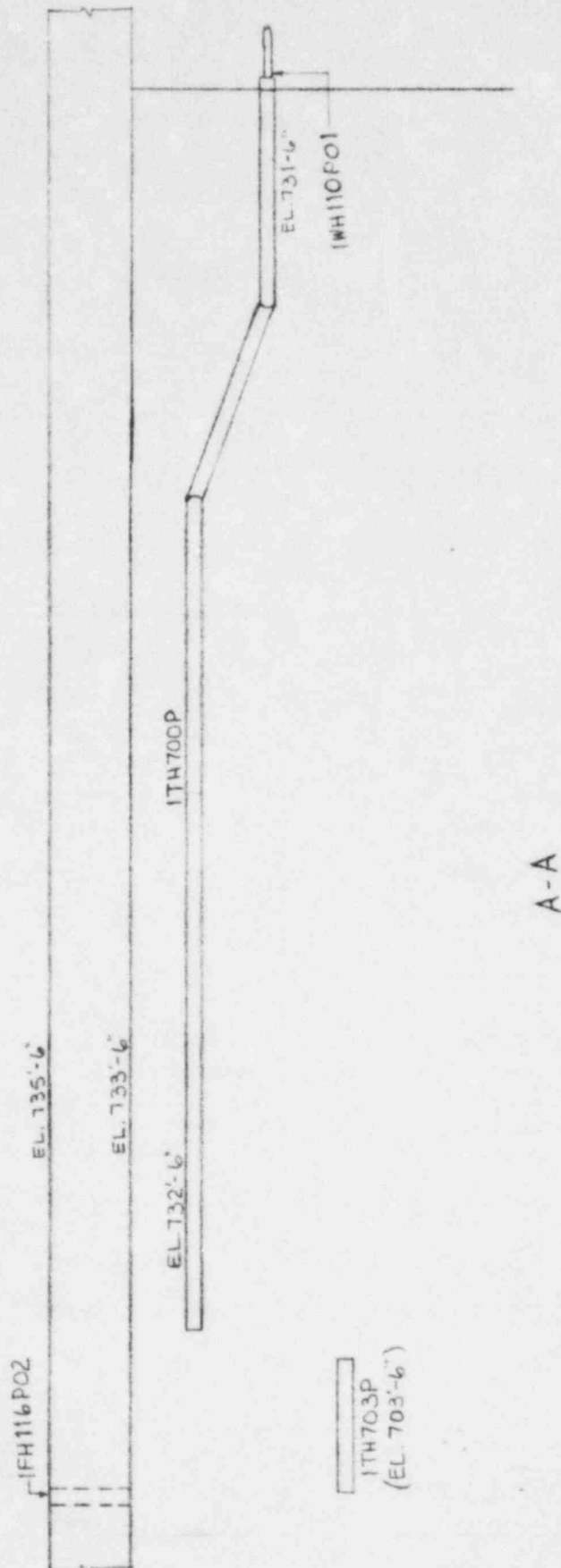
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CHARGING PUMP CH-F-1B  
CABLE ROUTING

AUX BLDG EL. 722'-6"  
PAGE 1 OF 4





CHARGING PUMP 6H-P-1B  
 CABLE ROUTING (SECTIONS)  
 PAGE 2 OF 4



CHARGING PUMP CH-P-1B  
CABLE ROUTING (DETAILS)  
PAGE 3 OF 4

# NOTES

1. THE POWER CABLE 1CHSBPH300 FOR CHARGING PUMP CH-P-1B IS ROUTED OUTSIDE THE CHARGING PUMP CUBICLE TO THE 735'-6" ELEVATION OF THE AUXILIARY BUILDING VIA RACEWAYS 1WH110P01, 1TH700, 1TH703 AND 1FH116P02.
2. NO OTHER CABLES ARE ROUTED IN THE RACEWAYS LISTED IN NOTE 1.
3. DATA ON RACEWAYS OF NOTE 1.

<u>RACEWAY</u>	<u>SIZE</u> <u>(in)</u>	<u>LENGTH</u> <u>(ft)</u>	<u>CROSS-SECTION</u> <u>(sq.in.)</u>	<u>MARK NO.</u>
1WH110P01	4	2	12.74	CAB-10
1FH116P02	4	9	12.74	CAB-10
1TH700P	3 X 6	30	18	DHB-01
1TH703P	3 X 6	2	18	DHB-01

4. EXPLANATION OF MARK NO OF NOTE 3.

CAB-10 4" rigid steel conduit zinc coated 4" diam.

DHB-01 6" ladder type cable tray 3" deep  
aluminum. 3" deep - 6" wide.

## ATTACHMENT 2

### Primary Auxiliary Building (PA-1G) (Elev. 722)

The following clarifying information is offered for your consideration in your review of our request for exemption to the requirements of Appendix R relative to fire area PA-1G.

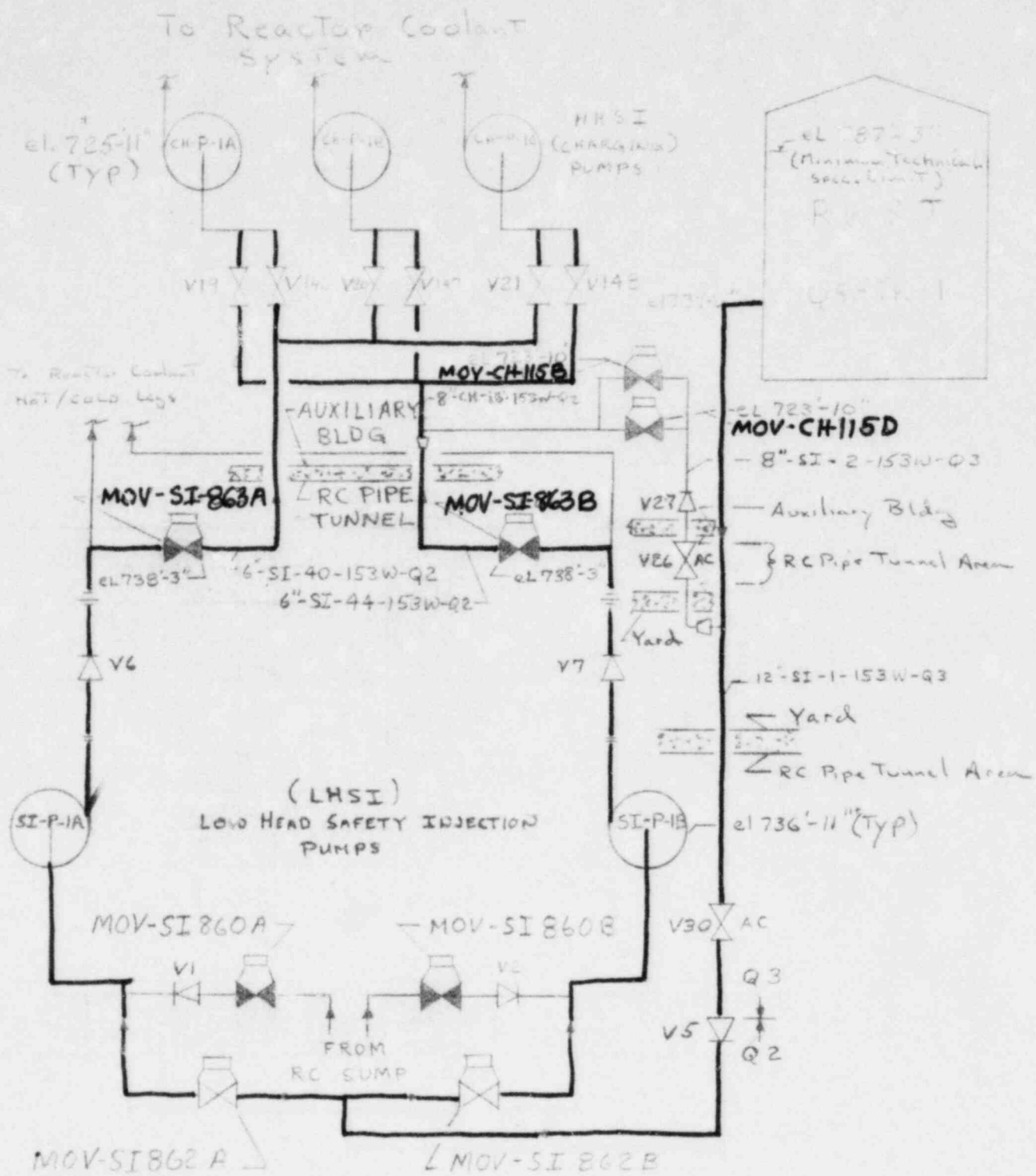
Redundant functions potentially lost.

1. Charging capability (CH-P-1A, 1B, 1C)  
The raceways associated with CH-P-1B as shown on the attached sketches will be separated from the general fire area PA-1G by a one-hour fire barrier to protect it from "an exposure fire of moderate duration (5-10 minutes)" as noted in your draft SER. See attached sketches (pages 1 through 4) for description of cable routing and details.
2. Containment Ventilation MOV-RW 106 A & B (N.O.); MOV-RW 114 A & B (N.O.); MOV-RW 116 (N.S.); MOV-RW 117 (N.S.). As previously stated in our exemption request, these valves are all functionally associated with supplying a backup cooling medium to the containment air recirculation coils. These valves and associated conduit are located in close proximity to the floor and could be directly involved in a fire generated by some transient combustible. However, given the limited duration of any conceivable fire in this location, these valves could be manually repositioned prior to the containment exceeding 135°F (containment temperature above which equipment degradation is assumed). The temperature drift from 105°F to 135°F would take approximately 30 minutes. This includes a very conservative assumption for reactor coolant or steam leakage in the containment atmosphere.
3. Backup Water Supply to the Aux. Feedwater Pumps (MOV-RW 103 C & D) stated in our exemption request, MOV-RW 103C and MOV-RW 103D are only required as an emergency backup water supply to the auxiliary feedwater pumps. The primary source of auxiliary feedwater will not be lost in this area and the plant will have the additional capability of feeding the steam generators from existing yard tankage via a new auxiliary feedwater pump described in Chapter 6, Section 6.2.
4. Charging Pump Suction Valving MOV-CH 115 B & D. These normally shut parallel valves are interposed between the charging pumps and the RWST. If these valves are rendered inoperable by virtue of a fire in PA-1G, an alternate flow path as detailed on the attached sketch will be available. The charging pump would draw suction from the RWST through the idle low head safety injection pumps SI-P-1A, 1B. The only action required of the control room operator to make thus flow path available would be to open MOV-SI 863A or B located on Benchboard A, or, locally if necessary.

Attachment 2, (Continued)

Based upon the above clarification and the information previously provided, it is our belief that subsequent to completion of the proposed modifications this area will be covered by an equivalent level of fire protection to that required by Appendix R to 10 CFR 50.





ALTERNATE FLOW PATH TO THE CHARGING PUMP SUCTION

## ATTACHMENT 3

### Portable Ventilation

In several areas, we proposed to use portable gasoline powered fans as a redundant means of supplying essential ventilation to the charging pumps, emergency switchgear rooms and the control room air conditioning space, if the normal HVAC equipment is damaged by a fire. The portable fans would be placed in position and operated by the plant fire brigade. The movement and use of portable equipment was considered a repair, and was not acceptable for hot shutdown related components.

#### Emergency Switchgear (ES 1 & 2)

If one makes the conservative assumption that the heat load during the fire condition is equivalent to that dissipated during the design condition (approximately 80,000 BTU/hr) areas ES 1 & 2 would heat up from 80°F to 120°F in approximately 30 minutes. This heatup rate is predicated solely upon the heat capacity of the air intrapped with the room volumes with a credit taken for structural heat sinks. If the volume of NS-1 is assumed available to act as a heat sink, then the transient would extend to 1½ - 2 hours depending upon the effectiveness of the thermally driven airflow through the interconnecting doorway shown on Figure 3.4-1 of our Appendix R submittal report.

#### Charging Pump Cubicles (PA-lg, lh, lf)

With the access hatch open to the charging pump cubicle sufficient natural circulation will exist to allow for the continuous short term operation of the pump. It is anticipated that given a load of 97,000 BTU/hr, the cubicle temperature will heat-up to approximately 145°F within one hour. This transient will prematurely age the pump motor but it will not preclude the short term operation of the unit. Within the hour, the portable emergency ventilation equipment discussed in Chapter 6 of our Appendix R report would be operative reducing the cubicle temperature into its normal range of 80 - 104°F.

In both of the above areas, there is sufficient time available to place the emergency ventilation into operation without prejudicing the availability of equipment required for hot shutdown.

This same equipment could be used to ventilated areas CR-1, 2, 3 or 4. However, by virtue of our commitment to installing the Backup Indicating Panel described in Chapter 5 of the Appendix R report, BV-1 has an alternative means of maintaining shutdown conditions assuming a loss of these areas. In lieu of the above, ventilation of these spaces is not required to meet the requirements of Appendix R since alternative shutdown capability has been provided external to the control room area.