



Washington Public Power Supply System
A JOINT OPERATING AGENCY

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Nuclear Regulatory Commission
Region V
Suite 202 Walnut Creek Plaza
1990 N. California Boulevard
Walnut Creek, California 94596

June 1, 1981
GO-1-81-164



Attention: Mr. B. H. Faulkenberry
Chief, Reactor Construction
Projects Branch

Subject: PROJECTS 1 AND 4
DOCKET NOS. 50-460 AND 50-513
REPORTABLE CONDITION 10CFR50.55(e)
COMBUSTION AIR INTAKE DESIGN DEFICIENCY

Reference: 1) Telecon TJ Houchins, SS to DF Kirsch,
Region V Nuclear Regulatory Commission
December 8, 1981
2) GO1-81-02, dated January 6, 1981
D. W. Mazur to R. H. Engelken,
Director

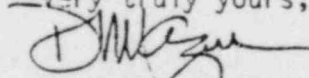


In reference 1) the Supply System informed your office of reportable deficiency under 10CFR50.55(e) and reference 2) was an interim report on the subject condition.

Attachment A includes a brief description as to how the deficiency was discovered, and the proposed action to be taken to correct the subject design deficiency. The design changes, as presented herein, have been approved by Project Engineering; however, the design has not received final Project Management approval. At such time as approval is received the design will be implemented and a final report will be transmitted to the Region V office under a separate cover. If any changes to this design are incurred between now and the time of final approval, you will be so notified. Final approval should be received no later than August 1, 1981; therefore, we are submitting this as an interim report.

If you have any questions or desire further information, please advise.

Very truly yours,


D. W. Mazur
Program Director
WNP-1/4

Attachment
DWM:MER:pin
cc: CR Bryant, Bonneville Power Administration/39C

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DESIGN ACTIONS

The following design changes were evaluated.

1. Proposal

To ensure that the starting of the Diesel Generator (DG), under a tornado condition, would not affect the integrity of the ventilation of other systems, it was proposed that the DG Combustion Air Intakes and HVAC system intakes be separated. Separation of the air intakes from the intake for the HVAC system in the DG area, and placing the DG combustion air intakes ahead of the tornado check valves would ensure safe operation of both systems under tornado conditions.

Final Action

Proposal was implemented as described. See Attachment II.

2. Proposal

Design the Combustion Air Intake Ducts to withstand the negative 1.5 psi, under a tornado condition.

Final Action

Proposal was implemented as described. Schedule 30 piping replaced the ducting previously used.

3. Proposal

Replace the existing louvers with a type which would substantially reduce rain and snow carry-over into the intake area, and evaluate the need to provide heat tracing for louvers to prevent ice or snow buildups.

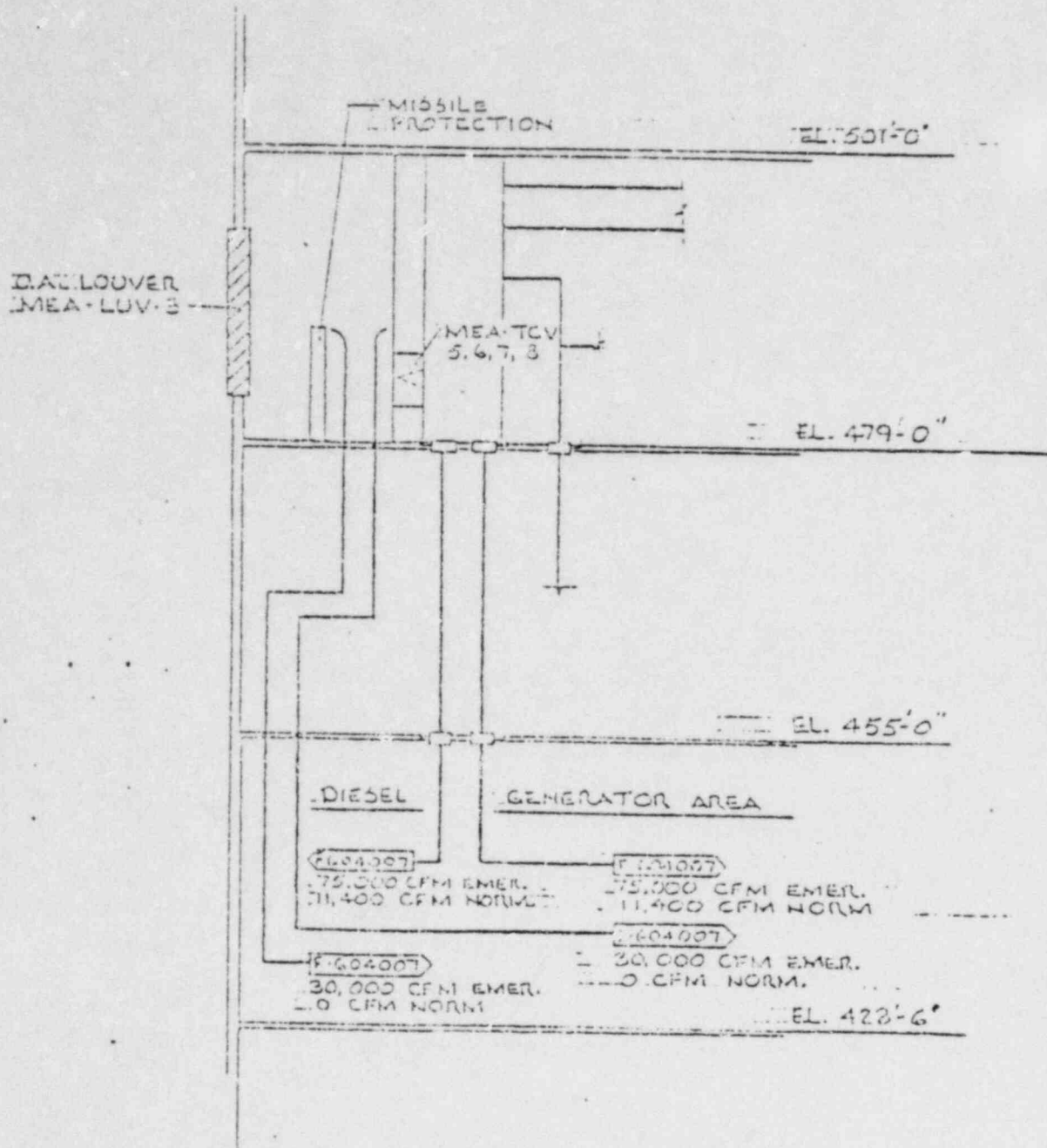
Final Action

Very low water penetration type AMCA certified louvers will be procured and installed. Heat tracing will not be required on this type of louver to withstand the environmental conditions in the area.

DISCOVERY OF THE REPORTABLE CONDITION

In the original design, as reported in the PSAR, the DG draws combustion air from the Emergency DG Accessories Area, where the machine is located. The room is served by the DG HVAC system which has two (2) modes of operation: "Normal" and "Diesel On." In the "Normal" mode, 11,400 CFM of ventilation air are delivered from each Air Handling Unit. In the "Diesel On" mode, a higher rate of air (67,900 CFM) is delivered from the Unit, to supply combustion air and ventilation air to the DG area. In the process of finalizing the design it was concluded that the system operation can be improved by having a directly "ducted" or "piped" connection for combustion air, from the suction side of the Air Handling

Unit, to the DG machine. Thus, the starting of the DG does not have to be fully coordinated with the "Diesel On" mode of the HVAC system. This design improvement would make the DG combustion air intake a part of the HVAC system air intake for the area. However, the related problem, as described above, was not realized at the time of the design improvement because the DG machines have the capability of withstanding and operating against the potential negative pressure occurred in a tornado condition, whereas the HVAC ducts are not designed for this pressure. The incompatibility was discovered during a review of the design of the DG combustion air intakes to verify their conformance to the requirements of SRP 9.5.8.



DIESEL COMBUSTION AIR INTAKES

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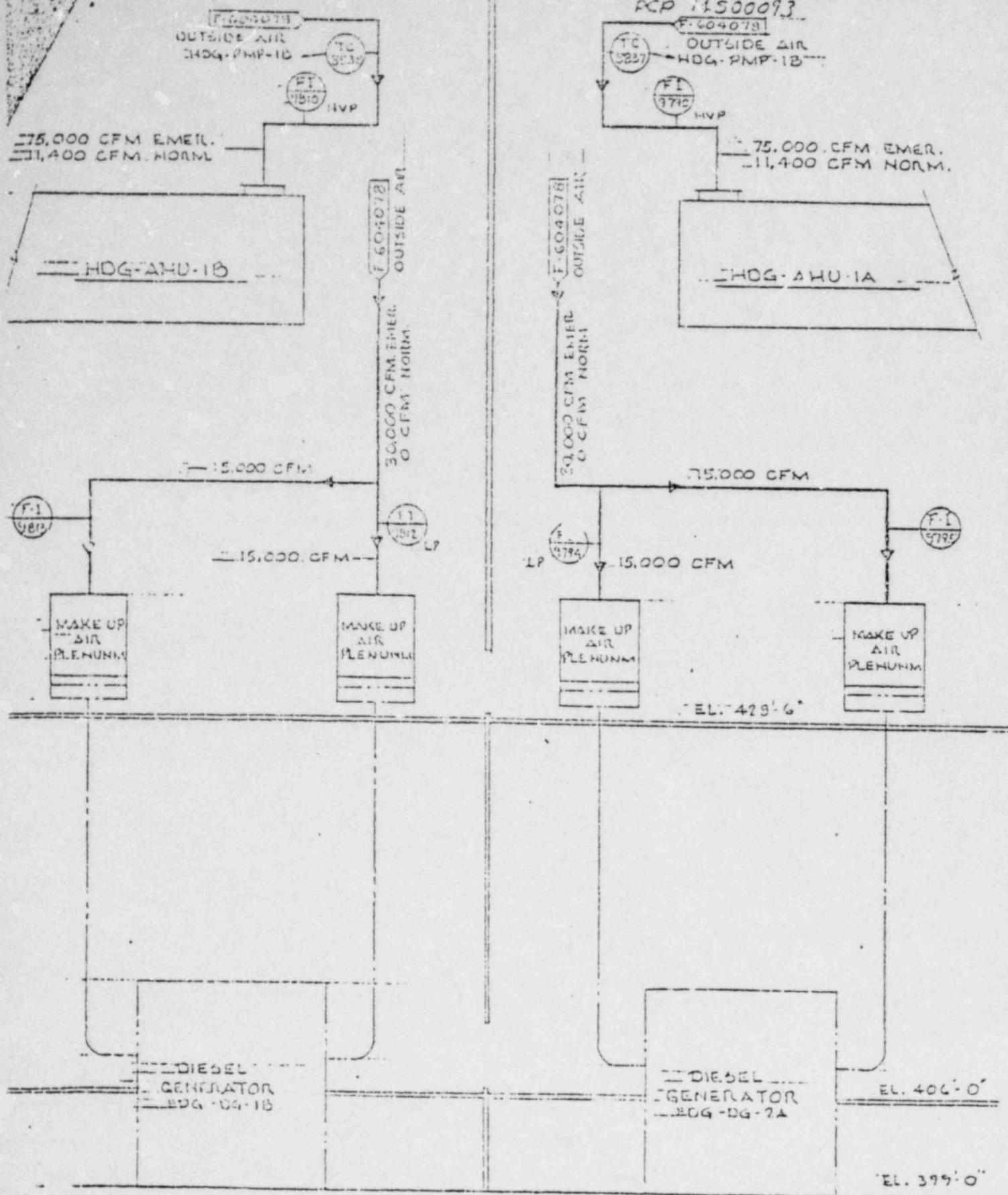
REF. DWGS.

SK1, 2, 3, 4, 5 & 9

9179-F-604078

SK-8

POOR ORIGINAL



DIESEL COMBUSTION AIR INTAKES

REF. DWGS.
 SK-1, 2, 3, 4, 5, 6, 8
 9779-F-604078

P & I D

POOR ORIGINAL

SK-9