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ACCESSION NBR: 8210210049      DOC. DATE: 82/10/04      NOTARIZED: NO      DOCKET #  
 FACIL: 50-397 WPPSS Nuclear Project, Unit 2, Washington Public Power      05000397  
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 BOUCHEY, G.D.      Washington Public Power Supply System  
 RECIP. NAME      RECIPIENT AFFILIATION  
 SCHWENCER, A.      Licensing Branch 2

SUBJECT: Forwards recommendations on proposed plant operating procedure changes, equipment mods & discussion of design basis ashfall. Advance warning arrangements in Section II.A. full commitment per supplemental SER Section 2.5.1.3.1.

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Article 1, § 1, of the Constitution of the United States provides: "All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives."

2. 3. 1. 2.

*(The following information was obtained from the Bureau of Census, U.S. Department of Commerce, Office of Economic Analysis.)*

## Washington Public Power Supply System

P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

October 4, 1982  
G02-82-825

Docket No. 50-397

Mr. A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2  
VOLCANIC ASHFALL PROTECTION

Reference: Letter G02-82-576, G.D. Bouchey (SS) to  
A. Schwencer (NRC), "Volcanic Ashfall  
Protection", dated July 1, 1982

The referenced letter described a task force the Supply System formed to study the impact of volcanic ashfall on the WNP-2 site. This task force has completed its study. Sixty (60) copies of their recommendations on proposed plant operating procedure changes, equipment modifications, and discussion of design basis ashfall are enclosed.

The advance warning arrangements discussed in Section II.A of the enclosure fulfill our commitment as described in SSER Section 2.5.1.3.1.

Based on our review of the impact of a design basis ashfall on the plant, we have concluded that incorporation of the task force recommendations in plant procedures and design will provide further assurance of safe plant operation and shutdown following such an event.

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Mr. A. Schwencer, Chief  
Licensing Branch No. 2

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October 4, 1982  
Volcanic Ashfall Protection

With this submittal all information necessary to close confirmatory issue 1.8(24) of the WNP-2 Safety Evaluation Report Supplement No. 1 has been provided.

Very truly yours,



G. D. Bouchey  
Manager, Nuclear Safety and Licensing

CDT/jw  
Enclosure

cc: R. Auluck - NRC  
W.S. Chin - BPA  
R. Feil - NRC Site

## I. DESIGN BASIS ASHFALL

The design basis volcanic ashfall, as presented in the WNP-2 FSAR, is the result of extensive research and analysis performed by Woodward-Clyde Consultants and the Supply System. Since the majority of historic measurements of volcanic ashfall were taken with the ash in a compacted state, the Supply System considers this information to be the most reliable for Engineering calculations.

The following table compares the results of calculated ash values using information from the WNP-2 FSAR, the WNP-2 SER (NUREG-0892 Supplement No. 1, August 1982) and the May 18, 1980 Mt. St. Helens eruption. Although we believe the FSAR values to be a better approximation of actual conditions during a Design Basis Ashfall, the more conservative figures from the SSER, coincident with the loss of offsite power for two hours, were used to evaluate the WNP-2 plant systems and equipment with regard to operability and reliability during a Design Basis Ashfall. This evaluation has resulted in proposed revisions to operating procedures and modifications to equipment to ensure that the plant could operate safely and achieve safe shutdown following a Design Basis Ashfall. These proposed changes are described in Section II and III.

	Mt. St. Helens <u>1980</u>	<u>FSAR</u>	<u>SSER</u>
Maximum Ashfall (in) uncompacted	2.75	5.00	7.4
compacted	1.65	3.00	3.00
Ashfall Duration (hrs)	20	20	20
Ashfall Rate (in/hr) Average	.14	.25	.35
Maximum	.21	.35	.44
Average Grain Size ( $\mu\text{m}$ )	75	75	75
Density ( $\text{lbs}/\text{ft}^3$ ) compacted	96	96	96
Compaction (%)	40	40	60
Air Concentration ( $\mu\text{gm}/\text{m}^3$ ) Average	69,795	124,634	174,488
Maximum	104,693	155,793	219,536



## II. PROCEDURE REVISIONS

### A. Emergency Plan Implementing Procedure

The Emergency Plan and Implementing Procedures contain provisions for notification of personnel and activation of appropriate emergency centers for the effective management of emergencies at WNP-2. Arrangements have been made for advance notification of ashfall to the Supply System via NAWAS receivers to be installed in the Security Communications Control Center (SCCC) at the Supply System's Multi-Purpose Facility and in the near-site Emergency Operations Facility. Information provided will include, if available, the predicted ash plume arrival time, the expected ash fall duration, and the plume conditions. The Plant Emergency Director will be notified by the SCCC operator and will use the information to evaluate the emergency and activate the appropriate components of the Emergency organization. In general, an unusual event will be declared for volcanic activity resulting in visible airborne ash at the WNP-2 Site. If conditions warrant, non-essential personnel will be evacuated from the site and dust masks will be dispensed to Emergency personnel.

### B. Plant Operation Procedures

#### 1. Safety Instrumentation

Reactor coolant injection, nuclear boiler, and primary coolant and purging systems. Check for secured enclosures and sedimentation in pressure sensing line.

#### 2. Spray Pond

Monitor temperature and level readings.

#### 3. Air Compressors

Monitor draft gages on suction lines.

#### 4. Diesel Generators

Install roughing filters, set up air handling units for recirculation mode, and lower heat loads.

#### 5. SW Pumphouses

Check instrumentation and set up HVAC for recirculation mode.

#### 6. Control Room

Replace air handling unit filter with high dust capacity type.

#### 7. RB critical switch gear area HVAC.

Set for minimum outside air flow.



8. RB Emergency Pump Rooms, and Critical MCC Rooms.

Lower heat loads, install roughing filters on room air inlets, and monitor room temperatures.

9. RB HVAC

Set up air inlet scrubber systems, minimize negative pressure, reduce air flow to minimum, lower heat loads, monitor filter dp gages, and monitor temperature.

10. RW Building HVAC

Set up air inlet scrubber system, minimize negative pressure, lower heat loads, monitor filter dp gages, and monitor temperatures.

11. TG Building HVAC

Set up air inlet scrubber system, reduce air flow to minimum, set up positive pressure mode, lower heat loads, and monitor temperatures.

12. CW Pumphouse HVAC

Reduce air flow to minimum, monitor air conditioner filter dp gages and install temporary filters on water pump motor air intakes.

13. MU Water Pumphouse HVAC

Lower heat loads, alternate air handling unit operation, and monitor dp gages on filters.

14. Cooling Tower Electric Building HVAC

Close outside air dampers, set up air conditioning unit for recirculation mode, lower heat loads and monitor dp gages on filters.

15. Fire Protection System

Install roughing filter on air inlet of pumphouse No. 3, and monitor a draft gage on diesel combustion air cleaning system.

16. Structures

Monitor ash levels.

17. Train A (Division 1 Emergency Power)

a. Diesel Generator

Install roughing filters, set up air handling units for recirculation mode, and lower heat loads.



b. ADS

Set up system.

c. RHR-"A"

Complete valve line up, check instrumentation and install roughing filter on room air inlet.

d. SW-"A"

Complete valve line up, check instrumentation and set up SW pumphouse HVAC for recirculation mode.

18. Train B (Division 2 Emergency Power)

a. Diesel Generator

Install roughing filters, set up air handling units for recirculation mode, and lower heat loads.

b. RCIC

Complete valve line up, check instrumentation, and install roughing filter on room air inlet.

c. RHR-"B"

Complete valve line up, check instrumentation, and install roughing filter on room air inlet.

d. SW-"B"

Complete valve line up, check instrumentation, and set up SW pumphouse HVAC for recirculation mode.

e. ADS

Set up system.

III. EQUIPMENT MODIFICATIONS

1. Circulating Water Pumps

Install filter frames on pump motor air intakes.

2. Fire Protection

Install filter frames and dp gages on fresh air inlet to Well Water Pumphouse No. 3 and install draft gage on diesel air cleaning system.

3. RHR Pump Rooms

Install ductwork to hold filters for filtration of Reactor Building supply air, and install dp gages to assess filter condition.

4. RCIC Pump Rooms

Install ductwork to hold filters for filtration of Reactor Building supply air, and install dp gages to assess filter condition.

5. Diesel Generator Building

Install filter frames for filtration of outside air and install dp gages to assess filter condition.

6. Service Water Pump House

Install filter frames for filtration of recirculated air through cooling coils and install dp gages to assess filter condition.

7. Reactor Building Emergency Pump Rooms

Install filter frames for filtration of Reactor Building supply air, and install dp gages to assess filter condition.

8. Reactor Building Critical MCC Rooms

Install filter frames for filtration of Reactor Building supply air, and install dp gages to assess filter condition.

9. Instrument Air Compressors

Install suction gages and fine filters.

