REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8109150087 DOC.DATE: 81/09/08 NOTARIZED: YES DOCKET #
FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530
AUTH.NAME AUTHOR AFFILIATION
VAN BRUNT,E.E. Arizona Public Service Co.
RECIP.NAME RECIPIENT AFFILIATION
KERRIGAN,J. NRC - No Detailed Affiliation Given

SUBJECT: Forwards draft of revision to NRC Question 290.6, Section 5.4 & Table 2.3-24A of environ rept OL, per 810818. Final revision will be submitted in future suppl to environ rept OL.

DISTRIBUTION CODE: C001S COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 10
TITLE: Environ. Report Amendments & Related Correspondence

NOTES:Standardized Plant.1 cy:C Grimes 05000528
Standardized Plant.1 cy:C Grimes 05000529
Standardized Plant.1 cy:C Grimes 05000530

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
ACTION:	LIC BR #3 BC	18	1	1	LIC BR #3 LA	19	1	1
	KERRIGAN,J.	05	1	1				
INTERNAL:	EF TREAT SYS BR		1	1	ENV ENG BR	06	1	1
	HYD/GEO BR		1	1	I&E	15	2	2
	OELD		1	0	RAD ASMT BR	09	1	1
	REG FILE	01	1	1	SIT ANAL BR	07	1	1
	UT FIN BR	08	1	1				
EXTERNAL:	ACRS	20	3	3	LPDR	03	1	1
	NRC PDR	02	1	1	NSIC	04	1	1
	NTIS		1	1				

SEP 17 1981

Envico I

TOTAL NUMBER OF COPIES REQUIRED: LTTR 21 ENCL 20

RSO

ARIZONA PUBLIC SERVICE COMPANY

STA. _____ P.O. BOX 21666 - PHOENIX, ARIZONA 85036

September 8, 1981
ANPP-18873-JMA/JRM

Ms. Janis Kerrigan
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
ER-OL
File: 81-054-026

Dear Janis:

A draft copy of a revision to NRC Question 290.6, Section 5.4 and Table 2.3-24A of the ER-OL is attached per your request of August 18, 1981. This information, in final form, will be submitted in a future supplement to the ER-OL.

Very truly yours,

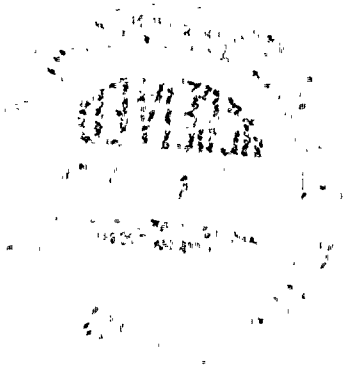
E. E. Van Brunt

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

EEVBJr/JRM/bj
Attachment

cc: W. F. Quinn
A. C. Gehr
P. Hourihan (w/a)

Cool
5/1



STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Edwin E. Van Brunt, Jr., represent that I am Vice President Nuclear Projects of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority so to do, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Edwin E. Van Brunt, Jr.

Sworn to before me this 11th day of SEPTEMBER, 1981.

Connie Lou Armstrong
Notary Public

My Commission expires:

June 24, 1983

DRAFT

Response to NRC Question No. 290.6 (revised)

Calculations of expected airborne concentration of dry drift particles due to the operation of the cooling towers are presented in Section 5.1.4.4.2 of the ER-OL.

Section 5.4.2 of the ER-OL has been revised to include the expected ambient air quality impacts due to the traffic associated with the operational work force for Units 1-3. Also, table 2.3-24A, Summary of Ambient Air Quality Standards has been revised.

DRAFT

5.4 EFFECTS OF SANITARY AND OTHER WASTE DISCHARGES

This section has been revised to reflect updated meteorological data and current PVNGS system design.

5.4.1 SANITARY WASTES

During plant operation, treated effluent from the package sewage treatment plant will be delivered to the water reclamation plant. The treated onsite sewage effluent will be available as additional water for cooling system makeup during normal operations. When the water reclamation plants are temporarily not operating, chlorinated effluent from the package sewage treatment plant will be delivered to the onsite evaporation pond. No major adverse environmental impact is anticipated from this operation, because there will be no direct discharges from the evaporation pond. Lining the evaporation pond limits seepage of the impounded effluent into local groundwater aquifers. Therefore, the evaporation pond is not expected to significantly affect recharge to the aquifers.

5.4.2 GASEOUS EFFLUENTS

There are three groups of facilities on the PVNGS site that are stationary sources of pollutants; the diesel generators, auxiliary boilers and recalciners. Source operational modes and emission parameters are described in section 3.7 and listed in table 5.4-1. Mobile source emissions will result from the operational workforce. Estimated annual averages of traffic volume in and out of PVNGS during operation are provided in table 5.6-2.

The diesel generators and auxiliary boilers are operated only on a limited basis:

A. The diesel generators are each tested for about 1 hour per month. This testing is not concurrent and the generators are not otherwise operated except under abnormal conditions.

Table 5.4-2

MAXIMUM EXPECTED OFFSITE CONCENTRATIONS AND COMPARISON WITH STANDARDS

Pollutant	Averaging Period	Standard ($\mu g/m^3$)	Pollutant Source: Auxiliary Boilers for Units 1,2&3	Diesel Generators for Unit 1	Diesel Generators for Unit 2	Diesel Generators for Unit 3	Recalciner	Operational Traffic
Sulfur oxides	Annual	80	----	--	--	--	.45	.10
Sulfur oxides	24-h	365	45	36	30	38	8.3	.10
Sulfur oxides	3-h	1300	185	68	56	70	15.4	.40
Particulates	Annual	60	---	--	--	—	.21	.38
Particulates	24-h	150	1.2	9	7	9	3.8	.38
Carbon monoxide	8-h	10,000	21	83	67	86	2.1	50
Carbon monoxide	1-h	40,000	---	—	—	—	---	401
Nitrogen oxides	Annual	100	---	—	--	--	1.1	3.3
Hydrocarbons	3-h	160	---	--	--	--	---	2.5

DRAFT

is 10,000 $\mu g/m^3$ and the concentrations predicted at the site boundary due to the auxiliary boiler emissions is 21 $\mu g/m^3$. The highest 8-hour average carbon monoxide concentrations predicted at the site boundary due to the diesel generators at Units 1 and 3 are 83 and 86 $\mu g/m^3$, respectively.

The short-term NAAQS for SO_2 is 365 $\mu g/m^3$ for 24 hours and 1300 $\mu g/m^3$ for three hours which is not be be exceeded more than once per year. The short-term SO_2 concentrations presented in table 5.4-2 due to the operation of the auxiliary boilers is the second highest value predicted for any given year (this is sometimes referred to by the EPA as the highest second-highest concentration). The short-term SO_2 concentrations presented in table 5.4-2 due to the operation of the diesel generators and recalciner represent the highest value predicted for any given year.

Estimates were made of ambient pollutant concentrations along access roadways due to the operational workforce for the three units. The traffic volume data presented in table 5.6-2 for the year 1986 were used in these calculations. A total of 23 buses, 67 cars, and 3 trucks were assumed to enter and leave the site each day. As a conservative assumption, these vehicles were assumed to enter and leave the site during two one-hour periods.

EPA emission factors [6,7] for 1980 model vehicles were used. Other assumptions used include an average vehicular speed of 45 mph, ambient temperature of 70 °F, and buses and trucks are gasoline powered. Calculations were made for hydrocarbon, carbon monoxide, nitrogen oxides, particulate and sulfur dioxide emissions. Concentration estimates were obtained from these vehicular emissions assuming wind blowing normal to a continuously emitting infinite line source using the appropriate dispersion equation.[8] Concentration calculations were made at a distance of 10 m. from the roadway

Annual mean. 70°C?

assuming conservative 1 m/sec wind speed and F stability class conditions. The value of the vertical dispersion coefficient used in these calculations of 1.6 m was obtained from the formulation of the EPA dispersion model HIWAY.[9] The estimated pollutant concentrations are listed in table 5.4-2. The only significant concentrations are for carbon monoxide.

The calculated pollutant concentrations from stationary and mobile sources as listed in table 5.4-2 are well below the standards. Therefore, in summary, no offsite violations of the NAAQS are predicted for SO_2 or any other criteria pollutants due to the operation of the diesel generators, auxiliary boilers or recalciners; nor from the vehicular exhaust emissions from the operational workforce traffic.

5.4.3 REFERENCES

1. User's Guide for RAM Volume I and II, Environmental Sciences Research Laboratory, Research Triangle Park, North Carolina EPA-600/8-78-106, November, 1978

2. Bowers, J. F., J. R. Bjorklund and C. S. Cheney. "Industrial Source Complex (ISC) Dispersion Model User's Guide, Volumes 1 and 2." Publication Nos. EPA-450/4-79-0, 1 (NTIS PB-80-133044, 133051, Magnetic tape PB-80-133036), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, December 1979

3. Briggs, Gary, "Diffusion Estimation for Small Emissions," Air Resources Atmospheric Turbulence and Diffusion Laboratory, National Oceanic and Atmospheric Administration, ATDL Contribution File No. 769 (Draft), Oak Ridge, Tennessee, May 1973.

4. "User's Manual for Single-Source (CRSTER) Model," Office of Air and Waste Management, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Report No. EPA-450/2-77-013, Research Triangle Park, North Carolina, July 1977.

5. Holzworth, George C., "Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States", Environmental Protection Agency, Office of Air Programs, Research Triangle Park, North Carolina, January 1972.

6. "Mobile Source Emission Factors", Office of Air and Waste Management", U.S. Environmental Protection Agency, Report No. EPA-400/3-78-005, Washington, D.C., March 1978

7. "Compilation of Air Pollutant Emission Factors", Office of Air and Waste Management, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Report No. AP-42, Research Triangle Park, North Carolina, August 1977, w. suppl.

8. Turner, D. Bruce, "Workbook of Atmospheric Dispersion Estimates", Air Resources Field Research Office, Environmental Science Services Administration, Office of Air Programs, Research Triangle Park, North Carolina 1970

9. Zimmerman, John R., and R.S. Thompson, "User's Guide for HIWAY, A Highway Air Pollution Model", Office of Research and Development, U.S. Environmental Protection Agency, Report No. EPA-650/4-74-008, Research Triangle Park, North Carolina, February 1975

Table 2.3-24A

SUMMARY OF AMBIENT AIR QUALITY STANDARDS ($\mu g/m^3$)

Pollutant	Averaging Time	Arizona Standard (a)	National (b)	
			Primary	Secondary
Carbon Monoxide	1 hr	40,000	40,000	40,000
	8 hr	10,000	10,000	10,000
Nitrogen Dioxide	Annual	100	100	100
Oxidants (Ozone)	1 hr	160	235	235
Particulates	24 hr	150	260	150
	Annual (geom mean)	75	75	60
Sulfur Dioxide	3 hr	1,300	--	1,300
	24 hr	365	365	--
	Annual	80	80	--
Hydrocarbons	3 hr (6-9 a.m.)	160	160	160

a. Not to be exceeded more than once per year..

b. Not to be exceeded more than once per year except in the case of ozone, not to be exceeded more than once per year based on a 3-year running average.