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AUTH.NAME AUTHOR AFFILIATION
VAN BRUNT,E.E. Arizona Public Service Co.
RECIP.NAME RECIPIENT AFFILIATION
Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards application for amend to CPPR-141,CPPR-142 & CPPR-143 permitting transfer of El Paso Electric Co ownership interest to M-S-R Public Power Agency.Supporting financial info & revised environ rept encl.N/o application.
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ARIZONA PUBLIC SERVICE COMPANY
P. O. BOX 21666 · PHOENIX, ARIZONA 85036

November 6, 1981
ANPP-19367-EEVBJr/CAB

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Application for Amendment to Construction Permits Nos. CPPR-141, CPPR-142 and CPPR-143
Palo Verde Nuclear Generating Station
Units 1, 2 and 3
Docket Nos. STN 50-528/529/530
File Nos. 81-044-026, 81-056-026

Reference: Letter dated October 1, 1981, from Reba M. Diggs, Facilities Program Coordinator, License Fee Management Branch, U.S. Nuclear Regulatory Commission, to Edwin E. Van Brunt, Jr., APS Vice President, Nuclear Projects, Arizona Public Service Company

Dear Sir:

Arizona Public Service Company (APS), as Project Manager and Operating Agent of the Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2 and 3, is enclosing herewith three originals and nineteen copies of its Application for Amendment to Construction Permits Nos. CPPR-141, CPPR-142 and CPPR-143, dated November 6, 1981.

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3/19 Fin. Info
3/22 Enviro Info
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The enclosed Application seeks the approval of the transfer by El Paso Electric Company to the M-S-R Public Power Agency (M-S-R) of a 3.95% undivided ownership interest as a tenant in common with the other Participants in PVNGS, and the amendment of Construction Permits Nos. CPPR-141, CPPR-142 and CPPR-143 to reflect such transfer.

In support and as part of the enclosed Application, APS is submitting herewith nineteen (19) copies of the financial qualifications information required by 10 CFR § 50.33(f). Also enclosed are twenty-two (22) copies of the environmental information required by 10 CFR Part 51. The environmental information consists of pre-

liminary revised pages to the Palo Verde Nuclear Generating Station Units 1, 2 and 3 (Docket Nos. STN 50-528/529/530), Environmental Report - Operating License Stage. The preliminary revised pages to the Environmental Report will be incorporated into the next ER-OL Supplement.

The general information required by 10 CFR § 50.33 is being submitted under separate cover in the form of revised pages to the Palo Verde Nuclear Generating Station (Docket Nos. STN 50-528/529/530), General Information, Operating License Application.

With respect to antitrust information, M-S-R at this time has no electrical generating capacity. Furthermore, none of the three members of M-S-R has electrical generating capacity in excess of 200 MW(e). Therefore, pursuant to 10 CFR § 50.33a, information regarding antitrust matters is not required for M-S-R or any of its members.

Based on the referenced letter, which concerns the applicable filing fee under 10 CFR § 170.22 for a similar application, APS is submitting herewith the filing fee associated with a Class III amendment. Enclosed is an APS check in the total amount of $4800 in full payment of such fee. This amount is based upon a fee of $4000 for amendment of Construction Permit No. CPPR-141, and a fee of $800 for amendment of Construction Permits Nos. CPPR-142 and CPPR-143.

Sincerely,

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

EEVB:CAB:jaw

Enclosures

This table and all other tables and figures in this section for PVNGS present the cumulative data as well as individual data for all participants. Where appropriate (that is, sales and purchases between participants), the cumulative data have been adjusted to prevent duplication.

Information in table 1.1-1 shows that the participants had a combined demand compound growth rate of about 5.6% per annum from 1968 to 1978, and that they anticipate a combined growth rate of 3.8% per annum between 1978 and 1988. Between 1988 and 1992, it is expected that the combined system demand will be growing at an average rate of more than 1170 megawatts per year.

All participants are summer peaking utilities. The electric demand and energy growth rate in the areas served by the participants can be attributed to a rate of population expansion greater than the national average, increased use of air conditioning, and a general trend toward higher per capita use of electricity.

Most of the participants do not have and do not anticipate having any interruptible load. SCE includes interruptible loads in its load management reductions, which reduce the peak forecast used in SCE planning studies.

Monthly demand and energy requirements for 1981 through 1988 for the combined systems of all participants as well as for an individual participant's systems, are presented in table 1.1-2. Figures 1.1-1 through 1.1-7 are projected 1987 to 1988 load duration curves for the participants' combined system as well as for each participant. The anticipated 1987 to 1988 load factor for the combined system is 60.3%, with individual load factors ranging from 57.4 to 70.2%. Analysis of the load duration curves indicates that nuclear energy production can displace higher priced coal resources, and that the full potential production of the nuclear units can be used in the combined systems of all participants. The displacement of coal resources

will in turn displace the need for the addition of oil-burning units, such as combined cycle and combustion turbine units. Thus, the use of domestic coal and nuclear resources will, each in turn, result in the area being less dependent on oil, an expensive and uncertain future energy resource.

All of the participants are members of the WSCC. Part of their membership obligation is to periodically report certain of the above load-resource data to the WSCC for use in various reports and studies. These data are compiled and published annually in the WSCC Summary of Estimated Loads and Resources. The loads and resources for the PVNGS Arizona and New Mexico participants are included in the total for Region III, Arizona-New Mexico Power Area; the PVNGS Southern California participants are included in the totals for Region IV, Southern California-Nevada Power Pool. Figure 1.1-8 shows the geographic boundaries of these areas.

The total annual peak demand and energy requirements for these two areas, as extracted from WSCC reports, are listed in table 1.1-3. These data, compiled from the 1972-1987 report period, pertain to all utilities in the geographical area and therefore are larger in magnitude than the data compiled solely for the PVNGS participants. Table 1.1-4 is a list of the monthly demand and energy requirements for the areas as extracted from the WSCC report for 1982 through 1987.

3 The loads and resources of SCPPA members except Los Angeles Department of Water and Power are presented in table 1.1-12. Comparable data for LADWP is presented in table 1.1-1, sheet 3 of 7.

4 The loads and resources of M-S-R members are presented in table 1.1-13.

1.1.1.2 Demand Projections

The need for PVNGS and other additional generating capacity rests on the validity of the forecasts made by the participants for their respective loads through 1990. To establish this validity the following topics are addressed:

- Methodology of forecasting
- Historical accuracy of forecasting
- Impact of energy conservation measures

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PRELIMINARY

Table 1.1-12

SCPPA MEMBERS LOADS AND RESOURCES (Sheet 11 of 11)

IMPERIAL IRRIGATION DISTRICT ELECTRIC UTILITY SYSTEM

(CALENDAR YEAR)

	Actual	Projected									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Hydro:											
Drop No. 4 Unit 1.....	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Drop No. 4 Unit 2.....	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Drop No. 3 Unit 1.....	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Drop No. 3 Unit 2.....	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Drop No. 2 Unit 1.....	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Drop No. 2 Unit 2.....	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Pilot Knob Unit 1.....	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Subtotal.....	39	39	39	39	39	39	39	39	39	39	39
Geothermal:											
Additions (1).....	0	0	0	0	0	3	6	9	12	15	18
Nuclear:											
Palo Verde 1.....	-	-	-	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Palo Verde 2.....	-	-	-	-	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Palo Verde 3.....	-	-	-	-	-	-	3.5	3.5	3.5	3.5	3.5
Subtotal.....	0	0	0	4	7	7	11	11	11	11	11
Other:											
WAP-Parker-Davis.....	33	33	33	33	33	33	33	33	33	33	33
SCE-Axis Plant.....	25	25	25	25	25	25	25	25	25	25	25
Purchases.....	40	40	40	40	40	100	100	100	250	250	261
Subtotal	98	98	98	98	98	158	158	158	308	308	319
Total.....	452	477	477	531	534	597	604	607	760	763	777
Margin for Reserves/Losses..	84	86	56	84	70	115	102	85	217	198	190
Percent Margin.....	23	22	13	19	15	24	20	16	40	35	32

(1) - Expected to be met by participation in one or more of the following projects: Heber Geothermal, Brawley or Niland.

Table 1.1-13

M-S-R MEMBER LOADS AND RESOURCES (Sheet 1 of 3)

MODESTO IRRIGATION DISTRICT

ELECTRIC UTILITY SYSTEM

(CALENDAR YEAR)

	Actual		Projected								
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Energy Requirements (Gwh).....	1268	1358	1400	1446	1492	1539	1595	1652	1712	1773	1837
Peak Load (MW).....	351.7	344	398	414	431	447	465	483	503	523	544
Resources: (MW)											
Existing											
Hydro	54.4	54.2	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
Gas Turbine	39.0	53.4	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0
Proposed											
Small hydro[a].....	-	-	0.5	6.0	19.4	30.8	32.8	32.8	32.8	32.8	32.8
Geothermal	-	-	-	-	-	-	82.5	82.5	82.5	82.5	82.5
Harry Allen	-	-	-	-	-	-	30.0	60.0	90.0	120.0	120.0
ANPP	-	-	-	41.7	83.4	83.4	125.0	125.0	125.0	125.0	125.0
Purchases.....	258.3	236.4	272.2	248.1	218.2	224.6	152.0	151.0	149.0	148.0	144.0
Total	351.7	344.0	420.2	443.3	468.5	486.3	569.8	598.8	626.8	655.8	651.8
Margin for Reserve/ Losses.....	0	0	22.2	29.3	37.5	39.3	104.8	115.8	123.8	132.8	107.8
Percent Margin.....	0	0	5.6	7.1	8.7	8.8	22.5	24.0	24.6	25.4	19.8

4/

a. Consists of at least seven separate small hydroelectric projects.

b. Addition of additional geothermal, cogeneration, wind, hydroelectric, and coal resources is under study.

Table 1.1-13

M-S-R MEMBER LOADS AND RESOURCES (Sheet 2 of 3)

CITY OF SANTA CLARA

ELECTRIC UTILITY SYSTEM

(CALENDAR YEAR)

	Actual		Projected								
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Energy Requirements (Gwh).....	1609	1754	1858	1959	2052	2142	2234	2326	2415	2516	2612
Peak Load (MW).....	265.6	297	314	331	347	262	378	394	409	426	442
Resources[b]: (MW)											
Thermal											
Geothermal, NCPA....	-	-	60.4	60.4	60.4	60.4	60.4	78.4	78.4	78.4	78.4
Gas Turbine - Cogen ..	-	5.8	5.8	5.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8
Small Hydro											
Black Butte.....	-	-	-	-	-	6.8	6.8	6.8	6.8	6.8	6.8
Stony Gorge.....	-	-	-	-	-	3.9	3.9	3.9	3.9	3.9	3.9
Large Hydro											
Calaveras.....	-	-	-	-	-	62.0	62.0	62.0	62.0	62.0	62.0
Purchases.....	265.6	291.2	261.0	278.0	266.6	224.8	255.6	253.6	268.6	345.1	345.1
Total.....	265.6	297.0	327.2	344.2	372.8	403.7	434.5	450.5	465.5	542.0	542.0
Margin for Reserve/ Losses.....	0	0	13.2	13.2	25.8	41.7	56.5	56.5	56.5	116.0	100.0
Percent Margin.....	-	-	4.2	4.0	7.4	11.5	14.9	14.3	13.8	27.2	22.6

4

4

Table 1.1-13

M-S-R MEMBER LOADS AND RESOURCES (Sheet 3 of 3)

CITY OF REDDING

ELECTRIC UTILITY SYSTEM

(CALENDAR YEAR)

	Actual		Projected								
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Energy Requirements (Gwh).....	444.6	481.4	511.2	536.8	562.4	587.9	609.2	630.5	651.8	673.1	690.2
Peak Load (MW).....	105	113	120	126	132	138	143	148	153	158	162
Resources: (MW)											
Thermal											
ANPP.....	-	-	-	8.3	16.6	16.6	25.0	25.0	25.0	25.0	25.0
Harry Allen.....	-	-	-	-	-	-	5.0	10.0	15.0	20.0	20.0
Geothermal.....	-	-	-	-	-	-	16.5	16.5	16.5	16.5	16.5
Small Hydro											
Whiskeytown.....	-	-	-	-	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Saeltzer.....	-	-	-	-	-	0.9	0.9	0.9	0.9	0.9	0.9
Lake Redding.....	-	-	-	-	-	-	14.0	14.0	14.0	14.0	14.0
Lake Red Bluff.....	-	-	-	-	-	-	14.0	14.0	14.0	14.0	14.0
North Fork.....	-	-	-	-	-	-	-	6.0	6.0	6.0	6.0
Cottonwood.....	-	-	-	-	-	-	-	-	-	-	9.0
Large Hydro											
Calaveras.....	-	-	-	-	-	18.8	18.8	18.8	18.8	18.8	18.8
Purchases.....	105	113	120	117	115.4	115.4	115.4	115.4	115.4	115.4	115.4
Total.....	105	113	120	126	136.0	155.7	213.6	224.6	229.6	234.6	243.6
Margin for Reserve/ Losses.....	-	-	-	-	4.0	17.7	70.6	76.6	76.6	76.6	81.6
Percent Margin.....	-	-	-	-	3.0	12.8	49.4	51.8	50.1	48.5	50.4

The participants generally rely on a high percentage of resources that are remote from their load areas, with power carried to the load areas over EHV transmission systems. There is a limited number of interconnections between the participants' service areas and surrounding systems. Even assuming that the large amounts of power that may be needed are available for purchase, the limited number of interconnections and high use of the EHV tranmission system will make it difficult for those large amounts of power to be transmitted to the participants' service areas.

Delays in the construction of PVNGS generating facilities will have the following adverse effects on systems planning and operation.

A. Longer Lead Times - Consistent delays in construction lengthen the lead time required for generation planning. This reduces the flexibility and adaptability of incorporating new technology or changes in load forecasts into the planning process.

B. Decreased System Reliability - Delays will result in lower reserve margins that decrease system reliability and thereby cause more frequent service interruptions.

C. Additional Costs - The delay of a generating facility may require the temporary substitution of a more costly alternative with the possibility of a greater environmental impact. Delays also result in additional costs for interest during construction of the planned facility. The impact of delay on production costs is shown in table 1.3-8. The assumptions regarding heat rate, fuel cost, O&M costs, and discount rates are presented in table 1.3-9. 2

The energy mix of SCPPA members and M-S-R members that have their own generation is shown in tables 1.3-10 and 1.3-11, respectively. 4

Table 1.3-1

1981

RESERVE MARGIN DUE TO DELAY OF PVNGS

(MW) (Sheet 1 of 10)

	No Delay	1 Year Delay	2 Year Delay	3 Year Delay	Indefinite Delay
Arizona Public Service	697	697	697	697	697
LADWP	1464	1464	1464	1464	1464
El Paso Electric	153	153	153	153	153
Public Service of New Mexico	238	238	238	238	238
Salt River Project	1037	1037	1037	1037	1037
Southern California Edison	2197	2197	2197	2197	2197
Participants Total	5786	5786	5786	5786	5786

Table 1.3-9

AVERAGE SYSTEM DATA

SOUTHERN CALIFORNIA EDISON[f] (Sheet 6 of 6)

Year	Heat Rate (BTU/KWH)	Fuel Cost ($/MWH)	O&M Cost ($/MWH)
1981	9880	42.40	3.50
1982	9850	49.70	4.40
1983	9860	49.20	4.40
1984	10080	53.60	4.90
1985	10170	58.60	5.30
1986	10290	60.90	6.10
1987	10430	63.80	6.90
1988	10520	65.50	8.10
1989	10560	69.10	8.80
1990	10520	73.60	9.60

f. SCE discount rate is 15%

Table 1.3-10

SCPPA MEMBERS ENERGY MIX(a)

MEMBER	HYDRO	GAS	DIESEL	COAL
LADWP.....	14%	27%	28%	31%
Burbank.....	3%	72%	25%	0
Glendale.....	10%	78%	12%	0
Pasadena.....	17%	72%	11%	0
Imperial Irrigation District	52%	34%	14%	0

a. Excludes members without their own generation.

Table 1.3-11

M-S-R MEMBERS ENERGY MIX(a)

MEMBER	HYDRO	GAS
Modesto Irrigation District.....	50.4%	49.6%
City of Santa Clara.....	0	100%

a. Excludes members without their own generation.