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ACCESSION NBR: 8705080307 DDC DATE: 87/04/30 NOTARIZED: NO 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 AUTHDR AFFILIATION  
 HAYNES, J. G. Arizona Nuclear Power Project (formerly Arizona Public Serv  
 RECIP. NAME RECIPIENT AFFILIATION  
 Document Control Branch (Document Control Desk)

SUBJECT: Informs that summary justifying removal of core protection  
 calculators & core operating limits supervisory sys will be  
 submitted to NRC by 870115. Chapter 15 of FSAR will not be  
 revised since only most limiting analysis should be incl.

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NOTES: Standardized plant. M. Davis, NRR: 1Cy. 05000528  
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## Arizona Nuclear Power Project

P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

April 30, 1987  
161-00180-JGH/BJA

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2 and 3  
Docket Nos. STN 50-528 (License No. NPF-41)  
STN 50-529 (License No. NPF-51)  
STN 50-530 (License No. NPF-65)  
RCP Coastdown Safety Analysis  
File: 87-A-056-026

- References:
- (1) Letter from E. A. Licitra, NRC, to E. E. Van Brunt, Jr., ANPP, dated April 7, 1987. Subject: RCP Coastdown Safety Analysis.
  - (2) Letter from J. G. Haynes, ANPP, to G. W. Knighton, NRC, dated December 26, 1986 (ANPP-39506). Subject: ANPP Response to Operational Concerns.
  - (3) Letter from J. G. Haynes, ANPP, to G. W. Knighton, NRC, dated July 29, 1986 (ANPP-37623). Subject: NRC Request for Additional Information on the January 9, 1986, Reactor Trip at PVNGS Unit 1.

Dear Sirs:

In Reference (1), the NRC Staff requested ANPP to provide the results of the updated safety analysis which accounts for the slightly faster Reactor Coolant Pump (RCP) coastdown rates that were observed in PVNGS Unit 1 on January 9, 1986. The NRC Staff also suggested that Section 15 of the PVNGS FSAR be revised with the updated safety analysis. As described in References (2) and (3), ANPP applied penalty factors to the Core Protection Calculators (CPCs) and the Core Operating Limits Supervisory System (COLSS) to compensate for the observed RCP coastdown rates in PVNGS Units 1 and 2. A subsequent analysis by the NSSS vendor justified the removal of these penalty factors. The analysis concluded that the slightly faster RCP coastdown rate results in an earlier reactor trip which leads to results which are no more limiting than the existing total loss of reactor coolant flow accident analysis. Therefore, since Chapter 15 of the FSAR should only contain the most limiting analyses, it is not appropriate to revise the FSAR to reflect the case with the slightly faster RCP coastdown rate. It should be noted that the accident analyses to support Cycle 2 operation at PVNGS will assume the more conservative (faster) RCP coastdown rate. In response to the NRC request to provide the analysis which justified removal of the CPC and COLSS penalty factors, ANPP will provide a summary of this analysis to the NRC Staff by June 15, 1987.

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USNRC Document Control Desk  
Subject: RCP Coastdown Safety Analysis  
161- 00180  
page 2

If you have any additional questions on this matter, please contact Mr. W. F. Quinn of my staff.

Very truly yours,

*J. G. Haynes*

J. G. Haynes  
Vice President  
Nuclear Production

JGH/BJA/rw

cc: O. M. De Michele  
E. E. Van Brunt, Jr.  
G. W. Knighton  
E. A. Licitra  
R. P. Zimmerman  
J. B. Martin  
A. C. Gehr



DISTRIBUTION  
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April 30, 1987

DOCKET NO(S). 50-528/529

Mr. E. E. Van Brunt, Jr.,  
Executive Vice President  
Arizona Nuclear Power Project  
P. O. Box 52034  
Phoenix, Arizona 85072-2034  
SUBJECT: ARIZONA PUBLIC SERVICE COMPANY  
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1 AND 2

The following documents concerning our review of the subject facility are transmitted for your information.

- ☐ Notice of Receipt of Application, dated \_\_\_\_\_.
- ☐ Draft/Final Environmental Statement, dated \_\_\_\_\_.
- ☐ Notice of Availability of Draft/Final Environmental Statement, dated \_\_\_\_\_.
- ☐ Safety Evaluation Report, or Supplement No. \_\_\_\_\_ dated \_\_\_\_\_.
- ☐ Environmental Assessment and Finding of No Significant Impact, dated \_\_\_\_\_.
- ☐ Notice of Consideration of Issuance of Facility Operating License or Amendment to Facility Operating License, dated \_\_\_\_\_.
- ☒ Bi-Weekly Notice; Applications and Amendments to Operating Licenses Involving No Significant Hazards Considerations, dated 4/22/87 [see page(s)] 13354 and Correction, dated 4/29/87.
- ☐ Exemption, dated \_\_\_\_\_.
- ☐ Construction Permit No. CPPR-\_\_\_\_\_, Amendment No. \_\_\_\_\_ dated \_\_\_\_\_.
- ☐ Facility Operating License No. \_\_\_\_\_, Amendment No. \_\_\_\_\_ dated \_\_\_\_\_.
- ☐ Order Extending Construction Completion Date, dated \_\_\_\_\_.
- ☐ Monthly Operating Report for \_\_\_\_\_ transmitted by letter dated \_\_\_\_\_.
- ☐ Annual/Semi-Annual Report- \_\_\_\_\_  
\_\_\_\_\_ transmitted by letter dated \_\_\_\_\_.

Office of Nuclear Reactor Regulation

Enclosures:  
As stated

cc: See next page

OFFICE	PD V						
SURNAME	JLee						
DATE	4/30/87						

Year	Percentage of Population Aged 65 and Over
1950	7.0
1960	8.5
1970	10.0
1980	11.5
1990	13.0

• • • • •

1. *Chlorophyll a* (Chl *a*)

Figure 1 displays a 3D scatter plot of 1000 simulated data points. The axes are labeled  $x_1$ ,  $x_2$ , and  $x_3$ . The points are distributed in a complex, non-linear pattern, indicating a non-linear relationship between the variables. The points are concentrated in a central region, with some outliers extending towards the edges of the plot.

[illegible]

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| 2     | 88      | 78  | 68 |
| 3     | 90      | 80  | 70 |
| 4     | 92      | 82  | 72 |
| 5     | 95      | 85  | 75 |



Mr. E. E. Van Brunt, Jr.  
Arizona Nuclear Power Project

Palo Verde

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