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 RECIP. NAME RECIPIENT AFFILIATION  
 Commissioners

SUBJECT: Requests addl time for DES review & notes Maricopa County residents' ignorance of availability. Social & economic costs, radiological effects & potential accidents & consequences have not been satisfactorily addressed.

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OFFICE OF SECRETARY  
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RANCH

December 17, 1981

U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Gentlemen:

I am responding to this letter by December 21, 1981, requesting more time to review this draft environmental statement. I did not receive it in time to make a full study of it, and I believe many residents of Maricopa County have no idea it is even out.

I do not believe the draft environmental statement sent to me addresses the social and economic cost involved with the operation of the Palo Verde Nuclear Generating Station. Nor does it address radiological effects because it does not attempt to solve the issue of waste disposal of the highly radioactive plutonium 239 that will be produced by Palo Verde.

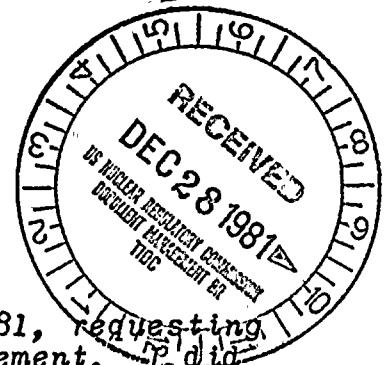
I do not believe Arizona Public Service has considered the likeliness of station accidents and their consequences.

The fact that APS has just requested water from the Central Arizona Project shows how it has already begun to interfere with our state water requirements. We do not need Palo Verde taking any water from the residents of this state. We have a crisis with water in Arizona without Palo Verde. It will only stand to get worse when and if Palo Verde goes on line.

It offends me that APS said there was nothing scenic on the land. Four thousand acres of the National Palo Verde Forest was, to say the least, scenic and beautiful before APS disfigured the land.

To get to the real fears Palo Verde is presenting, the lack of study and inspection dealing with this nuclear plant are most offensive. The following concerns are some of the issues the NRC needs to address:

1. No study of tornadic winds that have occurred in this area in the past.
2. Water conveyance crosses Hasayampa which frequently floods.
3. No study of intense summer heat on construction materials.



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ENCLOSURE 2

ACCIDENT EVALUATION BRANCH RESPONSE TO COMMENTS ON DES FOR PVNGS  
(PALO VERDE)

- APS-8 As stated in the DES, particulate concentrations in air on leaving the towers are expected to be approximately equal to the 24-hour National Ambient Air Quality Standard (NAAQS) for total suspended particulates. However, the ground level concentration in air is expected to be at least a factor of 100 less than the concentration at the release height. Therefore, no violation of the NAAQS at ground level is anticipated.
- APS-13 The inventories used are renormalized from Reactor Safety Study (WASH-1400) inventories which were generated for a core power level of 3200 Mwt. It was assumed in generating the RSS inventories that one-third of the core contained fuel with one-year-burnup, the second third contained fuel with two-years-burnup, and the remaining third contained fuel with three-years-burnup.
- APS-15 Use of the station minimum (871 meters) EAB distance rather than the Unit 1 EAB distance will not affect the calculated design basis accident (DBA) consequences, since Relative Concentrations (X/Q's) for 871 meters were utilized in determining these consequences.
- APS-17 The staff agrees that replacement fuel cost should be based on the projected energy mix within the area, but not in proportion to the energy mix. The more efficient energy sources will be base loaded even with the nuclear generator in operation. These units cannot take on more load if the nuclear unit is not operating, and therefore the replacement energy must come from the less efficient units that are not fully loaded. Staff projections show that most of the coal and natural gas generation will be base loaded, such that the replacement energy must come principally from oil fired generation.

In computing the replacement power cost, the staff has credited the decreased nuclear fuel usage as reflected by the term "additional" fuel costs appearing in the DES.

- SH-2 Design basis accidents (DBA's) are postulated for the purpose of reactor safety system design. They are not judged to be significant contributors to the risks since the safety systems have been designed to mitigate the consequences of such accidents. Therefore, the design basis accidents have not been subjected to the same level of probabilistic analysis as the more severe accidents analyzed in the DES.

- SH-5 The plant structures are designed according to the requirements of Regulatory Guide 1.76, which incorporates information on nationwide and regional statistics on tornadic winds.
- DOT-2 An evacuation time estimate study has been performed and the results are to be integrated into the protective action decision-making methodology.
- DHHS-3 Introduction of radionuclides into the liquid pathway as a result of a core-melt accident will require considerable time (days to years). As a result, provisions for an expanded ground water monitoring program can be made on an ad hoc basis. The Applicants' provisions for emergency laboratory support, emergency environmental monitoring, and use of state and federal monitoring capabilities provide a sufficient basis on which to institute such a program in a timely manner.

ENCLOSURE 3

CHANGES IN DES TEXT RESULTING FROM COMMENTS

#### 5.9.2.4 Mitigation of Accident Consequences

pursuant to the Atomic Energy Act of 1954, the Nuclear Regulatory Commission has conducted a safety evaluation of the application to operate PVNGS. Although this evaluation contains more detailed information on plant design, the principal design features are presented in the following section.

##### (1) Design Features

PVNGS contains features designed to prevent accidental release of radioactive fission products from the fuel and to lessen the consequences should such a release occur. Many of the design and operating specifications of these features are derived from the analysis of postulated events known as design-basis accidents. These accident preventive and mitigative features are collectively referred to as engineered safety features (ESF). The possibilities or probabilities of failure of these systems is incorporated in the assessments discussed in Section 5.9.2.5(2).

Each steel-lined, prestressed, posttensioned concrete containment is a passive mitigating system which is designed to minimize accidental radioactivity releases to the environment. Safety injection systems are incorporated to provide cooling water to the reactor core during an accident to prevent or minimize fuel damage. Cooling fans provide heat-removal capability inside the containment following steam release in accidents and help to prevent containment failure due to over-pressure. Similarly, the containment spray system is designed to spray cool water into the containment atmosphere. The spray water also contains an additive (sodium-hydroxide) which will chemically react with any airborne radioiodine to remove it from the containment atmosphere and prevent its release to the environment.

*hydroxide*  
All the mechanical systems mentioned above are supplied with emergency power from onsite diesel generators in the event that normal offsite station power is interrupted.

The fuel-handling building for each unit also has accident-mitigating systems. The safety-grade ventilation system contains both charcoal and high-efficiency particulate filters. This ventilation system is also designed to keep the area around the spent-fuel pool below the prevailing barometric pressure during fuel-handling operations so that outleakage will not occur through building openings. If radioactivity were to be released into the building, it would be drawn through the ventilation system, and any radioactive iodine and particulate fission products would be removed from the flow stream before exhausting to the outdoor atmosphere.

There are features of the plant that are necessary for its power-generation function that can also play a role in mitigating certain accident consequences. For example, the main condenser, although not classified as an ESF, can act to mitigate the consequences of accidents involving leakage from the primary to the secondary side of the steam generators (such as steam generator-tube ruptures). If normal offsite power is maintained, the ability of the plant to send contaminated steam to the condenser instead of releasing it through the safety valves or atmospheric dump valves can significantly reduce the amount of radioactivity released to the environment. In this case, the fission-product-removal capability of the normally operating offgas treatment system would come into play.

Much more extensive discussions of the PVNGS safety features and characteristics may be found in the applicant's FSAR. The staff evaluation of these features are addressed in the SER. In addition, the implementation of the lessons learned from the TMI-2 accident--in the form of improvements in design, and procedures and operator training--will significantly reduce the likelihood of a degraded core accident which could result in large releases of fission products to the containment. Specifically, the applicant will be required to meet those TMI-related requirements specified in NUREG-0737. As noted in Section 5.9.2.5(7), no credit has been taken for these actions and improvements in discussing the radiological risk of accidents.

## (2) Site Features

The NRC reactor site criteria, 10 CFR Part 100, require that the site for every power reactor have certain characteristics that tend to reduce the risk and potential impact of accidents. The discussion that follows briefly describes the Palo Verde site characteristics and how they meet these requirements.

First, the site has an exclusion area, as required by 10 CFR Part 100. The exclusion area, located within the 4050-acre site, is owned by the applicant. The minimum distance from the edge of the Unit 3<sup>2557</sup> containment building to the exclusion area boundary is 3402 ft (1037 m). There are no residents within the exclusion area. Material submitted by the applicant states that the applicant owns all surface rights in the exclusion area, but does not own all mineral rights. The applicant has stated that it has the authority, required by Part 100, to determine all activities in this area. There are no activities unrelated to plant operation that occur within the exclusion area except for the activity associated with the construction of Units 2 and 3. There are no public roads, railways, or waterways traversing the exclusion area.

Second, beyond and surrounding the exclusion area is a low population zone (LPZ), also required by 10 CFR Part 100. The LPZ for the Palo Verde site is a circular area with a 21,000-ft (6400-m) radius, measured from the center of the Unit 2 containment building. Within this zone, the applicant must ensure that there is a reasonable probability that appropriate protective measures could be taken on behalf of the residents and other members of the public in the event of a serious accident. The population density of the LPZ is very low and is expected to remain that way for the life of the plant. There are no industrial, commercial, or institutional facilities in the LPZ now or planned for the future. There are very few transient personnel within 10 mi of the site, and these are mostly migrant farm workers. In case of a radiological emergency, the applicant has made arrangements to carry out protective actions, including evacuation of personnel in the vicinity of the nuclear plant. For further details, see the section below on Emergency Preparedness.

Third, 10 CFR Part 100 also requires that the distance from the reactor to the nearest boundary of a densely populated area containing more than about 25,000 residents be at least one-and-one-third times the distance from the reactor to the outer boundary of the LPZ. Because accidents of greater potential hazards than those commonly postulated as representing an upper limit are conceivable, although highly improbable, it was considered desirable to add the population center distance requirement in Part 100 to provide for protection against excessive exposure doses to people in large centers. Sun City (with a 1977 population

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December 17, 1981

4. Lack of in-house link support systems; no hot line in case of emergency. Same setup occurred at Three Mile Island!
5. Only  $3\frac{1}{2}$  hours of primary cooling water available if system fails.
6. The record of Bechtel Construction Co. is questionable, and should be thoroughly investigated.
7. No study of native American rights concerning uranium mining and milling occurring on reservations, dealing with the construction of nuclear power plants, has been done by the NRC.

In closing, I would like to say that the Valley of the Sun newspapers indicated that the hearings with APS before the NRC would be open to public comment. However, I was told at the hearing by the Chairman of the Committee that they were not intended to be open to public comment, that they were only dealing with technical issues at that time.

Are there any plans by the NRC to allow for better public format in future hearings with APS?

Very truly yours,

*Sharon Harrington*  
Sharon Harrington