

CONFORMANCE TO REGULATORY GUIDE 1.97
PALO VERDE NUCLEAR GENERATING STATION, UNIT 1, 2 AND 3

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CONFORMANCE TO REGULATORY GUIDE 1.97

PALO VERDE NUCLEAR GENERATING STATION, UNIT NOS. 1, 2, AND 3

1. INTRODUCTION

On December 17, 1982, Generic Letter No. 82-33 (Reference 1) was issued by D. G. Eisenhut, Director of the Division of Licensing, Nuclear Reactor Regulation, to all licensees of operating reactors, applicants for operating licenses and holders of construction permits. This letter included additional clarification regarding Regulatory Guide 1.97, Revision 2 (Reference 2) relating to the requirements for emergency response capability. These requirements have been published as Supplement 1 to NUREG-0737, "TMI Action Plan Requirements" (Reference 3).

The Arizona Public Service Company, the applicant for the Palo Verde Nuclear Generating Station, provided a response to the generic letter on April 14, 1983 (Reference 4).

This interim report provides an evaluation of this submittal.

2. REVIEW REQUIREMENTS

Section 6.2 of NUREG-0737, Supplement 1, sets forth the documentation to be submitted in a report to NRC describing how a utility meets the guidance of Regulatory Guide 1.97 as applied to emergency response facilities. The submittal should include documentation that provides the following information for each variable shown in the applicable table of Regulatory Guide 1.97.

1. Instrument range
2. Environmental qualification
3. Seismic qualification

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4. Quality assurance
5. Redundance and sensor location
6. Power supply
7. Location of display
8. Schedule of installation or upgrade.

Further, the submittal should identify deviations from the guidance in the Regulatory Guide and provide supporting justification or alternatives.

Subsequent to the issuance of the generic letter, the NRC held regional meetings in February and March 1983 to answer licensee and applicant questions and concerns regarding the NRC policy on this matter. At these meetings, it was noted that the NRC review would only address exceptions taken to the guidance of Regulatory Guide 1.97. Further, where licensees or applicants explicitly state that instrument systems conform to the provisions of the guide it was noted that no further staff review would be necessary. Therefore, this report only addresses exceptions to the guidance of Regulatory Guide 1.97. The following evaluation is an audit of the applicant's submittals based on the review policy described in the NRC regional meetings.

3. EVALUATION

The applicant provided a response to the NRC Generic Letter 82-33 on April 14, 1983. This evaluation is based on this submittal.

3.1 Adherence to Regulatory Guide 1.97

Table 1 of the applicant's submittal identifies each variable, and states whether or not the instrumentation provided complies with the recommendations of Regulatory Guide 1.97. Therefore, it is concluded that

the applicant has provided an explicit commitment on conformance to the guidance of Regulatory Guide 1.97, except for those exceptions that were justified as noted below.

3.2 Type A Variables

Regulatory Guide 1.97 does not specifically identify Type A variables, i.e., those variables that provide information required for operator controlled safety actions. The applicant has not identified which instrumentation channels are Type A variables, but has shown that they have been incorporated into Types B, C, D, and E variables. By the applicant's explicit commitment on conformance, it is assumed that all Type A variables comply with the Regulatory Guide Category 1 recommendations. However, the applicant should identify these Type A variables and commit to the Category 1 recommendations for these variables.

3.3 Exceptions to Regulatory Guide 1.97

The applicant identified the following exceptions to the requirements of Regulatory Guide 1.97.

3.3.1 Residual Heat Removal Heat Exchanger Outlet Temperature

The applicant has supplied instrumentation for this variable that covers a range of 40 to 400°F. The recommended range for this variable was 32 to 350°F. The applicant provided no justification for this deviation. However, the Final Safety Analysis Report views the likelihood of the essential spray ponds to approach freezing as insignificant, as subfreezing temperatures have too short a duration. Therefore, the 8°F difference in the minimum indicated temperature at the outlet of the heat exchanger is insignificant. Additionally, Revision 3 of Regulatory Guide 1.97, issued in May 1983, changes the recommended low range from 32° to 40°F. The applicant satisfies this revision. Therefore, the instrumentation provided by the applicant for this variable is acceptable.

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3.3.2 Heat Removal by the Containment Fan Heat Removal System

The containment fan heat removal systems for post accident conditions are not employed at Palo Verde. The applicant has indicated in the FSAR (section 6.2.2.1) that Containment Spray System (CSS) will maintain containment pressure and temperature at acceptably low levels as required by NRC General Design Criteria 38. The CSS is an engineered safety feature system designed to reduce the containment pressure and temperature following a loss-of-coolant accident (LOCA), or main steam line break accident (MSLB). The applicant has also indicated that the indication for this variable is accomplished using the atmospheric temperature monitors listed in R.G. 1.97, Rev. 2. Based on the above justification the staff finds this deviation acceptable.

3.3.3 Wind Speed

The applicant has provided instrumentation for this variable that covers a range of 0 to 50 miles per hour. Regulatory Guide 1.97 recommends a range of 0 to 67 miles per hour. The applicant justifies this deviation by stating that historical data shows that the supplied range is adequate. The justification for this deviation is acceptable.

3.3.4 Estimation of Atmospheric Stability

The applicant has provided instrumentation for this variable that covers a range of -6 to +18°F. Regulatory Guide 1.97 recommends a range of -9 to +18°F. The applicant justifies this deviation by stating that the supplied range has proven to be adequate by site historical data. The justification for this deviation is acceptable.

4. CONCLUSIONS

Based on our review we find that the applicant either conforms to or is justified in deviating from the guidance of Regulatory Guide 1.97 with the following exceptions:

1. The applicant has not identified specific Type A variables (Subsection 3.2).

5. REFERENCES

1. NRC letter, D. G. Eisenhut to all Licensees of Operating Reactors, Applicants for Operating Licenses, and Holders of Construction Permits, "Supplement No. 1 to NUREG-0737--Requirements for Emergency Response Capability (Generic Letter No. 82-33)," December 17, 1982.
2. Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident, Regulatory Guide 1.97, Revision 2, U.S. Nuclear Regulatory Commission (NRC), Office of Standards Development, December 1980.
3. Clarification of TMI Action Plan Requirements, Requirements for Emergency Response Capability, NUREG-0737 Supplement No. 1, NRC, Office of Nuclear Reactor Regulation, January 1983.
4. Arizona Public Service Company letter, E. E. VanBrunt, Jr. to Director of Nuclear Reactor Regulation, NRC, ANPP-23505, File: 83-056-026; G.1.01.10, April 14, 1983.



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