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Arizona Public Service Company  
PALO VERDE NUCLEAR GENERATING STATION  
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-0034

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102-02251-JML/TRB/NLT  
August 20, 1992

JAMES M. LEVINE  
VICE PRESIDENT  
NUCLEAR PRODUCTION

Mr. John B. Martin  
Regional Administrator, Region V  
U. S. Nuclear Regulatory Commission  
1450 Maria Lane, Suite 210  
Walnut Creek, CA 94596-5368

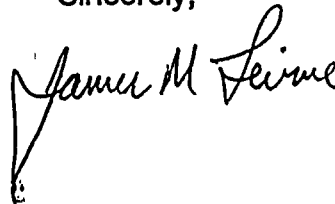
Dear Mr. Martin:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2, and 3  
Docket Nos. STN 50-528/529/530  
Revision 1 to the Justification for Continued Operation -  
Steam Generator Tube Rupture Analysis Concerns (JCO-91-02-01)  
File: 92-056-026**

Please find enclosed for your information a copy of Revision 1 to the Justification for Continued Operation (JCO) for Steam Generator Tube Rupture Analysis Concerns. Revision 1 to the subject JCO was issued for Palo Verde Units 1, 2, and 3 to administratively limit the Reactor Coolant System dose equivalent Iodine-131 to 0.6  $\mu\text{Ci/gm}$ . The need for this JCO, as detailed in the body of the JCO, was originally discussed with NRR PVNGS Senior Project Manager Charlie Trammell and Resident Inspector James Sloan in January 1992. A telecon was held with the NRC to discuss the issuance of Revision 1 in July 1992.

If you have any questions, please contact Thomas R. Bradish at (602) 393-5421.

Sincerely,



JML/TRB/NLT/pmm

Enclosure

cc: C. M. Trammell  
J. A. Sloan  
A. H. Gutterman  
A. C. Gehr  
Document Control Desk

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**ENCLOSURE**

**REVISION 1 TO THE JUSTIFICATION FOR CONTINUED OPERATION  
STEAM GENERATOR TUBE RUPTURE ANALYSIS CONCERNS (JCO-91-02-01)**



Arizona Public Service Company  
COMPANY CORRESPONDENCE

ID #: 102-02218-TRB/NLT

DATE: July 29, 1992

TO: File

Sta. #:

Ext.:

FROM: T. R. Bradish

Sta. # 7636

Ext. 82-5421

FILE:

SUBJECT: 92-177-419

**Revision 1 to the Steam Generator Tube Rupture Analysis Concerns Justification for Continued Operation (JCO), JCO-91-02-01 (Units 1, 2 and 3)**

Revision 1 to the Steam Generator Tube Rupture Analysis Concerns Justification for Continued Operation increases the administrative control on dose-equivalent Iodine-131 from 0.4  $\mu\text{Ci/gm}$  to 0.6  $\mu\text{Ci/gm}$ . An evaluation performed subsequent to the initial issue of JCO (91-02-00) determined that an administrative limit of 0.6  $\mu\text{Ci/gm}$  will provide the necessary compensatory measure to ensure dose consequences will remain under the 10 CFR Part 100 dose limits of less than 30 Rem (GIS) during a postulated SGTR + LOP. The original limit of 0.4  $\mu\text{Ci/gm}$  required by Revision 0 of this JCO was chosen as the limit in January, 1992, because the limit was imposed on Unit 1 as a compensatory measure in support of the Interfacing System Loss of Coolant Accident (ISLOCA) JCO.

On October 24, 1991, Arizona Public Service Company (APS) internal validation efforts for the upgraded Emergency Operating Procedures (EOPs) identified a concern that early (relative to no operator action for 30 minutes currently assumed) operator actions could result in more steaming during the first 30 minutes of a Steam Generator Tube Rupture (SGTR) than is currently reflected in UFSAR Section 15.6.3.1, and which could result in correspondingly higher offsite doses. This concern was documented in Condition Report/Disposition Request (CRDR) 9-1-0236. Subsequent investigation determined that a Steam Generator Tube Rupture with Loss of Offsite Power (SGTR+LOP), without a single failure, could result in doses higher than those reported for a SGTR+LOP in CESSAR Section 15.6.3.2. UFSAR Section 15.6.3 reports dose consequences resulting from a SGTR with offsite power available, and for a SGTR+LOP with a single failure (SF), but not for a SGTR+LOP.

A review of the licensing submittals and corresponding safety evaluation reports (SERs) for SGTR events determined that, following NRC review of the CESSAR SGTR and SGTR+LOP analyses, Palo Verde Nuclear Generating Station (PVNGS) was required to reanalyze the SGTR+LOP event with a limiting single failure, as documented in UFSAR Section 15.6.3.2. The PVNGS FSAR originally referenced CESSAR for the

SGTR and SGTR+LOP events. In 1988, UFSAR Section 15.6.3 was amended to replace the reference to CESSAR SGTR+LOP with the SGTR+LOP with single failure analysis from UFSAR Appendix 15A, although it is not clear why the SGTR+LOP case was removed. Hence, there exists some confusion as to the PVNGS licensing basis for a SGTR+LOP (without a single failure). In the absence of a clearly defined PVNGS licensing basis for a SGTR+LOP, the Standard Review Plan 15.6.3 (SRP) acceptance criteria is deemed to apply.

An engineering evaluation of the radiological consequences of the postulated SGTR+LOP, incorporating operator actions consistent with both current and upgraded EOPs, was performed. Using the CESSAR assumptions for steam generator flashing and partitioning, and dispersion factors consistent with the UFSAR Section 15.6.3.2 (SGTR+LOP+SF) analysis, the evaluation results are well within the SRP 15.6.3 criteria and 10 CFR Part 100 limits (refer to Table 2, Case 4 on page 16 of the attached JCO), though they exceed the corresponding values documented in CESSAR Section 15.6.3.

The evaluation was also performed using the more conservative UFSAR assumptions for steam generator flashing and partitioning. By applying the compensatory action of limiting Reactor Coolant System (RCS) dose equivalent Iodine-131 to  $0.6 \mu\text{Ci/gm}$ , the offsite doses were verified to be in compliance with the 10 CFR Part 100 dose limits and within the acceptance criteria of SRP 15.6.3 (refer to Table 2, Case 1 on page 16 of the attached JCO). Hence, continued operation of PVNGS Units 1, 2, and 3 under the current Emergency Operating Procedures is justified.

The  $0.4 \mu\text{Ci/gm}$  administrative limit is, therefore, increased to  $0.6 \mu\text{Ci/gm}$  for Units 1, 2, and 3, as set forth in Revision 1 to the SGTR JCO. The above limit does not supersede the more restrictive limit of  $0.2 \mu\text{Ci/gm}$  currently imposed on PVNGS Units 2 and 3 for the ISLOCA JCO.

Attached is the Justification for Continued Operation; Steam Generator Tube Rupture Analysis Concerns, JCO-91-02-01, which documents the detailed safety evaluation and demonstrates that continued operation will not adversely affect the health and safety of the public. The compensatory action will remain in effect until it is demonstrated that the FSAR analyses envelope those actions that the operators may take in accordance with the EOPs. This may require changes to the EOPs, possible reanalysis and UFSAR changes.

TRB/NLT/nt

Attachment

