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(ACCELERATED RIDS PROCESSING)

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RECIP.NAME RECIPIENT AFFILIATION  
Document Control Branch (Document Control Desk)

SUBJECT: Informs that util intends to store various QA records in  
electronic form on computer document mgt sys.

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WILLIAM L. STEWART  
EXECUTIVE VICE PRESIDENT  
NUCLEAR

102-03469-WLS/SAB/GAM  
September 10, 1995

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-37  
Washington, DC 20555-0001

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2, and 3  
Docket Nos. STN 50-528/529/530  
Storage of Quality Assurance Records on Computer Systems**

Requirements for a record keeping system are specified by the NRC in 10 CFR 50, Appendix B, Criterion XVII, "Quality Assurance Records." The NRC has also issued guidance relating to the retention of quality assurance records, including Regulatory Guides 1.33 and 1.88, and Generic Letter 88-18. Since this guidance was issued, however, computer technology and use has evolved significantly such that many of the records produced in the operation and maintenance of a nuclear plant are created and managed on computers. Although NRC guidance does not explicitly address the retention of records on computer systems, this method of record retention can provide the capability to comply with the record retention requirements of 10 CFR 50, Appendix B, and other applicable regulatory requirements, while providing a significant cost savings compared to the retention of records on microfilm.

APS intends to store various quality assurance records in electronic form on a computer document management system (DMS). Storage of the original electronic files of records, or images of records, in the DMS with backup on magnetic media will continue to meet the record retention requirements of 10 CFR 50, Appendix B, Criterion XVII, other applicable regulatory requirements, and PVNGS Technical Specifications and commitments. A complete discussion of this record retention method is provided in the Enclosure to this letter. This record retention method is expected to save more than \$90,000 per year for nuclear fuel management records alone. This savings will result from eliminating the need to microfilm the electronic records which will be stored in the DMS. Much greater savings are expected to be realized as other record types are stored in the DMS in lieu of imaging on microfilm.

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U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Storage of Records on Computer Systems  
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Should you have any questions, please contact Scott A. Bauer at (602) 393-5978.

Sincerely,

*James M. Levine for WLS*

WLS/SAB/GAM

Enclosure: Storage of Quality Assurance Records on Computer Systems

cc: L. J. Callan  
K. E. Perkins  
B. E. Holian  
K. E. Johnston

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**ENCLOSURE 1**

**STORAGE OF QUALITY ASSURANCE RECORDS  
ON COMPUTER SYSTEMS**





## STORAGE OF QUALITY ASSURANCE RECORDS ON COMPUTER SYSTEMS

Appendix B of 10 CFR 50, Criterion XVII, "Quality Assurance Records," establishes requirements for record keeping systems, and Chapter 17 of the Standard Review Plan (NUREG-0800) expounds on these requirements. The purpose of the record keeping system is to ensure that records are available when needed. ANSI N45.2.9-1974, "Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants," as endorsed by Regulatory Guide 1.88 (Rev. 2) and ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," as endorsed by Regulatory Guide 1.33 (Rev. 2) both describe quality assurance controls regarding records.

The NRC has taken great steps in utilizing computer information technology as shown by the creation of the NRC computer Bulletin Board, the establishment of an NRC "Home Page" on the Internet World Wide Web, and requests to licensees to submit various reports and other communications in electronic format. This use of computer technology reduces the costs associated with handling paper documents and can increase efficiency and accuracy.

Many of the records produced by APS in the operation of PVNGS are created and managed on computers. Retention of these records, as required by PVNGS Technical Specifications, Title 10 of the Code of Federal Regulations (CFR), and other applicable requirements, currently involves imaging the records on microfilm. This conversion step from the original electronic form imposes a significant cost with no commensurate safety benefit.

APS plans to store various quality assurance records in electronic form in an on-line computer document management system (DMS), which is backed-up on magnetic media. Storage of records electronically in the DMS with backup on magnetic media, with appropriate administrative controls, will continue to meet the record retention requirements of 10 CFR 50, Appendix B, Criterion XVII, and other applicable regulatory requirements and PVNGS commitments. In Generic Letter 88-18, "Plant Record Storage on Optical Disks," the NRC identified specific quality controls necessary for an optical disk imaging system. Storage of records in the DMS with backup on magnetic media will comply with the intent of that guidance. The following are planned features of the document retention process on DMS. These planned features are not intended to be construed as commitments, and they may be modified to improve the record retention process.

- o The primary storage of the records will be in the on-line DMS. There will be administrative and built-in computer software controls for the storage of records in the DMS that will prevent deletion or modification of the records. The DMS will



- o provide access control, system backup, version control, viewing and searching services. The software has a feature which prevents overwriting a document once it has been archived in the system (it creates a new version rather than overwrite the old). Deletion of records archived in the DMS is prevented by built-in software access controls and administrative controls.
- o The data in the DMS is mirrored (stored on two separate computer hard drives simultaneously) to ensure the data is not lost. The system is backed up to magnetic tape at the end of each work day. The most recent two weeks of these daily backups are maintained to enable restoration if the on-line system should fail. A copy of the latest backup tape at the end of each quarter will be placed in the records storage vault that meets the requirements of ANSI N45.2.9-1974. The most recent two years of the quarterly backup tapes of the DMS will be retained. Access to the vault is limited as specified by PVNGS procedures.
- o The legibility of records stored in their original electronic form in the DMS and backed up to tape will be the same as the original record. The legibility of records retrieved from their original electronic form in the DMS would be superior to those retrieved from microfilm, or optical disk, since the record would not have been "imaged" for retention. The legibility of imaged records stored in the DMS would be superior to images stored on microfilm, since the DMS would not introduce imperfections caused by the film or the film reader.
- o The records which are archived in the DMS will be available on-line to computer users on the PVNGS Local Area Network (LAN). As stated above, the DMS software will not allow the electronic files of archived documents to be altered or deleted.
- o To ensure permanent retention of records, a new backup tape will be generated each quarter from the records retained in the DMS. This time period is well before the manufacturer's certified useful life of the original magnetic media is exceeded. Verification of the records so copied will not be necessary since the built-in computer software controls will have prevented any deletion or alteration of the records being retained in the DMS.
- o Periodic random inspections of records stored on the DMS will not be necessary. Since the backup tapes will be regenerated quarterly, degeneration of the magnetic media will not be a concern. Also, since the records will be stored in electronic form, there will be no degradation of record quality.
- o If the DMS storage and viewing system were to be replaced by an incompatible new system, the records stored on the old system will be acceptably converted to the new system before the old system is taken out of service. This will include verification of a sample of the records so copied.



Record retention requirements of Title 10 of the Code of Federal Regulations (e.g. 10 CFR 20.2110, 50.71, 71.1) specify that records may be retained in electronic media, but that the retained records must include all pertinent information such as stamps, initials, and signatures. In order to meet that requirement, APS plans to retain "partner" electronic files for records that have associated stamps, initials, and signatures. The partner file will consist of the images of the stamps, initials, or signatures pertinent to the associated record. Administrative controls will ensure that the appropriate record files and their partner files are kept together.

It should be noted that 18 CFR Part 125, "Preservation of Records of Public Utilities and Licensees," allows, and provides requirements for, the storage of records required to be retained under that part to be retained on magnetic tape.

Storage of quality assurance records in the DMS in electronic form is expected to save more than \$90,000 per year just for the nuclear fuels management records alone. This savings would result from eliminating the need to microfilm copies of records stored in the computer system. Much greater savings are expected to be realized as other records are stored in the DMS in lieu of microfilm.

