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WILLIAM F. CONWAY  
EXECUTIVE VICE PRESIDENT  
NUCLEAR

102-02937-WFC/RAB/JST  
April 29, 1994

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)**  
**Units 1, 2, and 3**  
**Docket Nos. STN 50-528/529/530**  
**Request for Exemption from Certain Requirements of**  
**10 CFR 73.55(d)(5); Requirements for Physical Protection**  
**Against Radiological Sabotage**  
**File: 94-056-026**

In accordance with the provisions of 10 CFR 73.5, "Specific Exemptions," Arizona Public Service Company (APS) is requesting an exemption to the requirement in 10 CFR 73.55(d)(5) which states that each person with unescorted access to the protected area, who is not employed by the licensee (i.e., contractors), "receives a picture badge upon entrance into the protected area which must be returned upon exit from the protected area...." Granting this request would allow contractors to take their badges offsite. The exemption is requested to allow implementation of a biometrics access control system. The system provides an alternative measure for protection against radiological sabotage; meets the same high assurance objective and the general performance requirements of the regulation; and provides a level of system performance equivalent to that which would be provided by the regulation.

The proposed biometric access control system would require each individual who is authorized for unescorted access into the protected area to have the physical characteristics of their hand (hand geometry) registered with their badge number in the access control computer system. When an individual enters the badge into the card reader and places his hand on the measuring surface, the system would record the individual's hand image. The unique characteristics of the extracted hand image will be compared with the previously stored template in the access control computer system to verify authorization for entry. Both the badge and the unique hand geometry of the individual registered to the badge would be necessary for access into the protected area. In the event a badge is lost by an individual, as a result of taking the badge offsite, unauthorized entry into the protected area with the badge alone would be prohibited

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without the hand geometry of the individual to whom the badge is registered. This identification process eliminates the need to issue and retrieve badges at each entrance/exit and allows all individuals with unescorted access to keep their badges with them upon departing from the site.

The attachment to this request provides the background and justification for the proposed exemption. This exemption request is essentially identical to an exemption request granted to Florida Power and Light Company on November 29, 1993. APS estimates that granting this request will provide an annual savings of approximately \$360,000 per year by reducing the staff required to issue and collect badges. This request qualifies as a cost beneficial licensing action and should be prioritized appropriately. APS is scheduled to proceed with the implementation of the biometrics access control by July 15, 1994, and respectfully requests processing of this exemption by August 1, 1994.

Should you have any questions concerning this matter, please contact Richard Bernier at (602)393-5882.

Sincerely,



WFC/RAB/JST/rv  
Attachment

cc: L. J. Callan  
K. E. Perkins  
K. E. Johnston  
R. P. Zimmerman



**ATTACHMENT**

**BACKGROUND AND JUSTIFICATION  
FOR THE PROPOSED EXEMPTION  
FROM CERTAIN REQUIREMENTS OF  
10 CFR 73.55(d)(5)**



## ATTACHMENT

### INTRODUCTION

Arizona Public Service Company (APS), in accordance with the provisions of 10 CFR 73.5, "Specific Exemptions," requests an exemption to a portion of the requirements in 10 CFR 73.55(d)(5). Specifically, exemption is requested from the portion of 10 CFR 73.55(d)(5) which states "An individual not employed by the licensee but who requires frequent and extended access to the protected and vital areas may be authorized access to such areas without escort provided that he receives a picture badge upon entrance into the protected area which must be returned upon exit from the protected area..." The present regulations do not prohibit employees of the licensee from taking their badges offsite and thus exemption from the regulation is only required for contract personnel who are authorized access to the protected area. The purpose of this exemption is to allow implementation of a hand geometry biometric access system which would provide the same level of protection against unauthorized access to the protected area and allow all individuals (employees and contractors) with unescorted access to the protected area to keep their badges upon departure from the protected area. This would eliminate the need to dedicate individuals to the issuance and retrieval of badges at the protected area entrance and exit locations and reduce cost without a decrease in security against radiological sabotage.

Title 10 CFR 73.55(a) specifies that "The Commission may authorize an applicant or licensee to provide measures for protection against radiological sabotage other than those required by this section if the applicant or licensee demonstrates that the measures have the same high assurance objective as specified in this paragraph and that the overall level of system performance provides protection against radiological sabotage equivalent to that which would be provided by paragraphs (b) through (h) of this section and meets the general performance requirements of this section." The general performance requirements are further defined as "The licensee shall establish and maintain an onsite physical protection system and security organization which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety." This exemption request qualifies under the above criteria in that: (1) the hand geometry biometric access system proposed by APS meets the high assurance objective and overall level of system performance against radiological sabotage equivalent to the regulation, and (2) the proposed system also meets the general performance requirements in maintaining a high level of assurance of prevention of unauthorized access to the protected area. A more detailed discussion of how the proposed system provides the high assurance objectives and overall level of system performance and general performance requirements is contained in the following sections.

This exemption is requested to allow use of a hand geometry biometric system to control



unescorted access into the protected areas of Palo Verde Nuclear Generating Station (PVNGS) and allow picture badges to be taken offsite by all personnel (contractor and employee) authorized unescorted access.

## **CURRENT PRACTICE**

Unescorted access into the protected area at PVNGS is controlled through the use of a photograph on a badge/keycard (hereafter referred to as a badge). The security officers at each entrance station use the photograph on the badge to visually identify the individual requesting access. The individual is then given the badge to allow access. Another security officer collects the badges upon exit from the protected area. The badges are then transferred back and stored at the entrance until the individual again needs access into the protected area.

## **PROPOSED SYSTEM**

APS proposes to use a hand geometry biometric access control system which will require each individual to have the physical characteristics of one of their hands registered with their badge number in an access control computer. Access is then controlled by the individual requesting access placing his badge into the card reader and his hand on a measuring surface, the computer then compares the hand geometry to that registered for the badge number. If the characteristics of the hand geometry stored in the computer match the badge number, access is granted. If the badge and hand geometry characteristics do not match access is denied. This provides a nontransferable means of identifying that the individual possessing the badge is the individual who was granted unescorted access. It also provides a positive means of assuring that a stolen or lost badge could not be used to gain access, thus eliminating the need to issue and retrieve the badges while maintaining the same high level of assurance that access is granted to only authorized individuals. All other access processes, including search function capability, would remain the same. The system will not be used for persons requiring escorted access (i.e., visitors).

The access process will continue to be under the observation of security personnel located within a hardened cubicle who have final control over the release of the entrance station turnstiles. A numbered picture badge identification system will continue to be used for all individuals who are authorized access to the protected area with escorts. Badges will continue to be displayed by all individuals while inside the protected area.

## **ASSURANCE OBJECTIVE**

American National Standard, ANSI/ANS-3.3, "Security for Nuclear Power Plants," states



that identification of individuals authorized access with escort can be accomplished by the use of "...a device that reads fingerprints, handprints, or some other unique physical feature." The current system of photo identification badges meets this requirement. The proposed system utilizing hand geometry access control also meets the requirements of ANSI/ANS 3.3 identification criteria. The biometric access control system will provide the same high level assurance objective regarding onsite physical protection, and is not inimical to the common defense and security and does not constitute an unreasonable risk to the public health and safety.

## **SYSTEM PERFORMANCE**

APS will use the hand geometry equipment which will meet the detection probability of 90% with a 95% confidence level. Testing evaluated by Sandia National Laboratory (Sandia Report, "A PERFORMANCE EVALUATION OF BIOMETRIC IDENTIFICATION DEVICES," SAND91--0276 UC--906 Unlimited Release, Printed June 1991) demonstrated that the hand geometry equipment is capable of meeting the proposed detection probability and confidence level. Based upon the results of the Sandia report and on experience with photo-identification processes, the proposed system will have a false acceptance rate less than the current system. APS will change the Physical Security Plan to implement a testing program to ensure the system maintains this level of performance.

The hand geometry access control system will continue to provide the overall level of performance equivalent to that called for in 10 CFR 73.55.

## **GENERAL PERFORMANCE REQUIREMENT**

The general performance requirement of 10 CFR 73.55(d)(1) is to ensure that the licensee controls all points of personnel access into the protected area. The proposed system will provide the same or greater level of assurance that access to the protected area by unauthorized individuals is prevented. APS believes the basis for the requirement in 10 CFR 73.55(d)(5), that non-licensee employees not be allowed to remove their badges from site, is to ensure that the badges could not be compromised or stolen by being taken offsite. The compromised or stolen badges then being used to allow unauthorized individuals into the protected area. The proposed system will allow contractors and employees to take their badges offsite. However, the concern that the badge may be stolen or compromised is eliminated by requiring both the badge and the hand geometry to be matched prior to granting entry into the protected area. Thus a lost or stolen badge could not be used to gain access to the protected area without the matching hand geometry characteristics of the individual registered in the access computer.

Implementation of the biometric access control system will continue to meet the general performance requirements of 10 CFR 73.55(d)(5).

