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 Document Control Branch (Document Control Desk)

SUBJECT: Informs NRC of recent developments re charging pump blocks.  
 Util currently pursuing mfg of clamp supported by C-E  
 analysis & intends to use clamped charging pump block as  
 spare until new spares received from vendor.

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## Arizona Nuclear Power Project

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August 31, 1987  
161-00470-JGH/BJA

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2 and 3  
Docket Nos. STN 50-528 (License No. NPF-41)  
STN 50-529 (License No. NPF-51)  
STN 50-530 (License No. NPF-65)  
Update on Charging Pump Blocks  
File: 87-A-056-026

In light of the NRC Staff's past interest in the charging system at PVNGS, ANPP would like to take this opportunity to inform the NRC Staff of recent developments concerning the charging pumps. During the first cycle of operation at PVNGS Unit 1, two charging pump blocks have developed internal cracks (not thru-wall cracks) and were removed from service. The first of the cracks was discovered in the Unit 1, "B" charging pump in October, 1986. This cracked block was replaced with the only spare block that ANPP had at that time. The second cracked charging pump block was found in March, 1987. This crack was found in the Unit 1, "A" charging pump. This charging pump block was removed from service and replaced with the block from the Unit 3, "B" charging pump. It should be noted that the number of hours of pump operation before crack discovery at PVNGS is not unexpected based upon previous experience with this type of pump at other nuclear power plants.

ANPP has been experiencing difficulties in procurement of spare charging pump blocks for use in the PVNGS units. After the second cracked block was found, ANPP borrowed a spare block from the Millstone Nuclear Power Plant as none were available from the vendor at that time. The Millstone block was used to replace the Unit 3, "B" charging pump block. ANPP has placed an order for 6 spare blocks. However, the first of these blocks is not expected to be on-site until March, 1988. After March, 1988, ANPP expects to receive one spare block per month until all of the ordered blocks are received. Due to these procurement problems, ANPP contracted Combustion Engineering (CE) to perform an analysis and manufacture the necessary equipment to allow the use of one of the existing, cracked charging pump blocks that has been removed from service. The Unit 1, "B" charging pump block was selected for this analysis. This pump block had a crack in the cylinder bore that did not reach the surface of the pump block.

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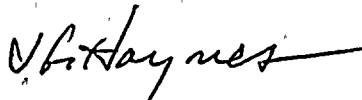
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Since this pump block had not developed a thru-wall crack, the block is still operable and capable of performing its design function. The CE analysis is based upon the use of a clamp that will allow for a long term operation of the pump while retarding propagation of the crack. The analysis indicates that the clamping of the cracked block will allow the pump to fulfill its intended functions during normal and abnormal operations of the charging pump.

ANPP is currently pursuing the manufacture of the clamp that is supported by the analysis. ANPP intends to use the clamped charging pump block as a spare that would be available for immediate installation until such time as new spares are received from the vendor. If you have any additional questions on this matter, please contact Mr. W. F. Quinn of my staff.

Very truly yours,



J. G. Haynes  
Vice President  
Nuclear Production

JGH/BJA/rw

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