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 LEVINE, J.M. Alabama Public Service Co.
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SUBJECT: Responds to request for Notice of Enforcement Discretion
 from Palo Verde Nuclear Generating Station Unit 2 TS
 limiting condition for Operation LCO 3.8.1.1.b.

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Arizona Public Service Company
PALO VERDE NUCLEAR GENERATING STATION
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

JAMES M. LEVINE
VICE PRESIDENT
NUCLEAR PRODUCTION

102-02898-JML/RAB/JRP
April 9, 1994

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Docket No. STN 50-529
Request for Notice of Enforcement Discretion
File: 94-055-026**

Arizona Public Service Company (APS) hereby requests a Notice of Enforcement Discretion from the PVNGS Unit 2 Technical Specification Limiting Condition for Operation (LCO) 3.8.1.1.b. The existing Technical Specification LCO Action states, "with one emergency diesel generator of 3.8.1.1.b inoperable.... restore the diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

APS is requesting the NRC to exercise discretion in not enforcing compliance with the requirement of the action statement for an additional 18 hours beyond the 72 hours to avoid an unnecessary plant shut down. The additional 18 hours will allow maintenance and testing to be completed on the "B" emergency diesel generator in order to declare it operable.

If "B" emergency diesel generator is not returned to operable status within the additional 18 hours, Unit 2 will be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The Plant Review Board has reviewed this request for Notice of Enforcement Discretion and determined that the 18 hour extension to the 72 hour action statement does not constitute an unreviewed safety question or create a nuclear safety hazard. Pursuant to 10 CFR 50.91(b)(1), a copy of this request is being forwarded to the Arizona Radiation Regulatory Agency.

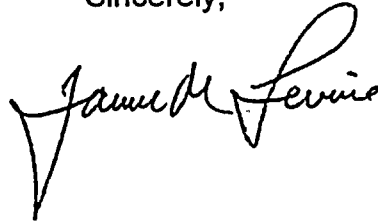
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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Request for Notice of Enforcement Discretion
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Should you have any questions, please call Richard A. Bernier at (602) 393-5882.

Sincerely,

A handwritten signature in cursive script, appearing to read "James M. Levine". The signature is written in dark ink and is positioned to the right of the word "Sincerely,".

JML/RAB/JRP/rv
Enclosure

cc: L. J. Callan
K. E. Perkins
K. E. Johnston
B. E. Holian
A. V. Godwin (ARRA)

ENCLOSURE

**REQUEST FOR NOTICE OF ENFORCEMENT DISCRETION
FOR COMPLIANCE WITH
LIMITING CONDITION FOR OPERATION 3.8.1.1.b**

Description of Condition

On Wednesday, April 6, 1994, the Unit 2 operators started the "B" emergency diesel generator for the monthly operability surveillance test. The area operator at the diesel identified an unusual noise coming from the engine. The operator notified the maintenance department to investigate. The engine was operated for approximately 20 minutes before it was shut down, declared inoperable, and entered the action statement at approximately 1245.

Engineering and maintenance investigated to determine the cause of the noise. The inspection covers for the 4L cylinder head and 4L cam lobe were removed. The intake lifters and the crosshead assembly were found in a degraded condition. During the disassembly of the 4L head to replace the intake lifters and intake crosshead, engineering and maintenance inspected for the cause(s) of the condition.

During the 4L disassembly, repair, and reassembly the following inspections were performed:

- abnormal component wear
- foreign material on or in the components
- abnormal head bushing wear
- inadequate lubrication
- bent or distorted parts
- cam lobes rotated on the cam shaft
- cylinders for abnormal cam lobe wear

The 4L head was reassembled per PVNGS standard work practices. The new components were installed. During the maintenance test run the 4L cylinder was noted as having a lower than expected exhaust temperature. Also the engine analysis, which started at the 4L cylinder had abnormally low cylinder pressures. The engine was shut down and an inspection was performed. The initial inspection revealed that the 4L exhaust valves were stuck open. The exhaust crosshead assembly appeared to be lodged in the crosshead bushing.

A meeting was held with operations, maintenance, and engineering to assess the current situation and address the root cause of failure investigation and repair. During the meeting, the team decided to remove the 4L cylinder head from the engine and place it in quarantine for a detailed root cause of failure. To repair the diesel, a replacement cylinder head assembly from the Unit 3 "B" diesel was used. Unit 3 is currently in a refueling outage with the "B" diesel out of service. This is the most expedient way to restore the unit 2 "B" diesel while maintaining the 4L head intact for root cause analysis. This work was completed early on Saturday, April 9, 1994. After a visual inspection, the "B" diesel generator was started in preparation for its four hour run and diagnostic evaluation; prior to being declared operable. Approximately 1½ hours into the run, the

fully loaded, "B" diesel generator tripped on an indicated overspeed signal. At the time of the trip Palo Verde personnel were present in the "B" diesel generator room observing the run. According to these individuals, no signs of an overspeed occurred, there was no increase in engine speed or additional noise or vibration at the time of the trip. The "B" diesel generator was running parallel to the grid fully loaded, which would also indicate that there was not an overspeed event. APS is currently troubleshooting the trip.

Technical Specification Limiting Condition for Operation 3.8.1.1.b requires that two separate and independent diesel generators shall be operable. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the operability of the A.C. offsite source by performing surveillance requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than preplanned preventative maintenance or testing, demonstrate the operability of the remaining operable diesel generator by performing surveillance requirement 4.8.1.1.2.a.4 within 24 hours; restore the diesel generator to operable status within 72 hours or be in at least hot standby within the next 6 hours and in cold shut down within the following 30 hours.

Therefore, APS is requesting the NRC to exercise discretion in not enforcing compliance with the ACTION statement of Technical Specification 3.8.1.1.b. Otherwise, a plant shut down would be required. The exercise of discretion is requested to remain in effect for 18 hours which would allow maintenance to be completed on the "B" diesel generator in order to declare it operable.

Safety Basis

The diesel generators are physically and electrically isolated from each other. Physical separation for fire and missile protection is provided by installing the diesel generators in separate rooms in a Seismic Category I structure. Power and control cables for the diesel generator and associated switchgear are routed in separate raceways. Each diesel generator is capable of supplying the required power to ESF and safe shutdown loads which ensures that the facility can be safely shut down and maintain in a shutdown condition for extended periods of time and that sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

APS engineering has performed a Probabilistic Risk Assessment for having "B" diesel generator inoperable for 18 hours beyond the 72 hour action statement. The increase in core damage probability for an additional 18 hours is $9E-7$ while the increase in core

This test is required to be completed regardless of when the inoperable EDG is restored to operability.

damage probability for forced shutdown of the unit with one diesel generator inoperable is $4E-6$.

Based on this information, the compensatory actions discussed later in this letter, and the projected weather conditions for this time frame which would not have an adverse impact on offsite power supplies; it can be concluded that there is no significant increase in the probability or consequences of an accident previously evaluated nor will it create the possibility of a new or different kind of accident from any accident previously evaluated.

The probabilistic risk assessment has shown that there is no significant reduction in the margin of safety.

Justification for the Duration of the Request

The extension of the LCO for 18 hours beyond the allowed outage time, for one inoperable emergency diesel generator, will provide the opportunity to complete corrective maintenance and subsequent surveillance testing on the "B" diesel generator. Failure to grant enforcement discretion for the additional 18 hours would result in an unnecessary plant shutdown and consequent plant transient.

The diesel generator was placed out of service at 1245 on April 6, 1994, to perform troubleshooting due to a noise coming from the engine during the monthly surveillance test. Inspection determined that the 4L cylinder intake lifters and crosshead assembly were found in a degraded condition. After replacement of the degraded components and additional inspections to ensure no other damaged components existed, the engine was reassembled and an engine diagnostic test was started on April 8, 1994.

During the test run, the 4L cylinder exhaust temperature was lower than expected. An inspection revealed that the exhaust valves were stuck open. At approximately 1600 on April 8, 1994, PVNGS management decided that the entire 4L cylinder head assembly should be removed and placed in quarantine for subsequent root cause of failure analysis. The removed assembly would be replaced by one from the Unit 3 "B" diesel generator which is out of service during the Unit 3 refueling outage. The work was completed and the engine testing began at approximately 0400 on April 9, 1994. As noted above, the engine tripped on an indicated overspeed condition. At the time of the engine trip all parameters for the engine were in their normal range. The additional time is requested to complete troubleshooting of the indicated overspeed trip, corrective maintenance, and testing the engine to ensure operability.

A Probabilistic Risk Analysis was performed to determine the impact on plant risk associated with the extension of the LCO for 18 hours beyond the allowed outage time. The analysis assumed that only the "B" diesel generator is out of service. The core damage probability increases by $9E-7$ for an 18 hour extension of the LCO. A forced

outage of Unit 2 with the "B" diesel generator inoperable increases the core damage probability by 4E-6.

Compensatory Actions

The redundant emergency diesel generator has been run to prove operability as required by the Technical Specifications. All redundant train safety equipment has been determined to be operable and Unit 2 Operations will maintain operability of the Train A ESF equipment and diesel generator while in the LCO action statement. In addition, the non-essential auxiliary feedwater pump will be verified and maintained fully operable, and no non-emergent work will be performed on these components while in this LCO action statement.

Switchyard (525 kV and startup yards) activities are normally performed under the cognizance and direction of the Unit 1 shift supervisor. Temporary instructions have been provided to Unit 1 to ensure that no interruption of offsite power to Unit 2 occurs while in the LCO action statement.

APS and Salt River Project responsible control centers have been notified of the work being performed in Unit 2 and will take precautions for the outside distribution system. No work will be performed or vehicular access allowed in the switchyard without specific review and approval by the Unit 1 Shift Supervisor and Vice President, Nuclear Production. Any emergent work in the switchyard will be evaluated for potential affect in the supply of offsite power to Unit 2 and will be authorized by the Vice President, Nuclear Production.

Unit 2 Operations personnel have been briefed on the conditions of this request for enforcement discretion. They will also be provided with copies of this request and the Notice of Enforcement Discretion.

APS has confidence that the additional requested time will be sufficient to allow troubleshooting, corrective actions, and testing to declare the emergency diesel generator operable with the currently known conditions.

Consequences to the Environment

APS has determined that the requested Notice of Enforcement Discretion involves no change in the amount or type of effluent that may be released offsite, and that there is no increase in individual or cumulative occupational radiation exposure. As such, operation of PVNGS Unit 2 in accordance with the proposed enforcement discretion, does not involve an unreviewed environmental safety question.

