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ACCESSION NBR: 8408270260 DOC. DATE: 84/08/20 NOTARIZED: YES DOCKET #  
 FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Public 05000528  
 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Public 05000529  
 STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Public 05000530  
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 KNIGHTON, G. Licensing Branch 3

SUBJECT: Requests approval of two temporary deviations in emergency preparedness plan from goals for augmentation of emergency response organization in Suppl 1 to NUREG00737. Nature & duration of deviations encl.

DISTRIBUTION CODE: A003D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 27  
 TITLE: OR/Licensing Submittal: Suppl 1 to NUREG-0737 (Generic Ltr 82-33)

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Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

ANPP-30234-EEVB/ACG/bf  
August 20, 1984

Director of Nuclear Reactor Regulation  
Attention: Mr. George Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2 and 3  
Docket Nos. STN 50-528/529/530  
File: 84-056-026; G.1.01.10

- Reference:
- (1) Notice, dated July 25, 1984, of Meetings Scheduled on July 30 and 31 and August 1, 1984
  - (2) Letter from E. E. Van Brunt, Jr., APS, to Director, NRR, Attn. G. W. Knighton, dated July 19, 1984 (ANPP-30006-EEVB/KEJ)
  - (3) Letter from E. E. Van Brunt, Jr., APS, to G. W. Knighton, NRC, dated July 6, 1984 (ANPP-29893-EEVB/GEC). Subject: Augmented Shift Staffing for Palo Verde Emergency Planning
  - (4) Letter from George Knighton, NRC, to E. E. Van Brunt, Jr., APS, dated June 15, 1984

Dear Sir:

Arizona Public Service Company (APS), applicant for a license to operate Palo Verde Nuclear Generating Station (PVNGS) Unit 1, requests approval of two temporary deviations in its emergency preparedness plan from the goals for augmentation of the emergency response organization set forth in Table 2 of Supplement 1 to NUREG-0737. The nature and duration of such deviations are set forth in Attachment 1 to this letter. Attachment 1 also describes the measures taken or to

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be taken and the surrounding circumstances which, taken together, compensate for the deviations and warrant their authorizations. The subject matter of this request has been raised and discussed in prior correspondence between and conferences of staff members of the office of Nuclear Reactor Regulation (NRR) and APS (see References (1) through (4)). This letter and Attachment 1 supersede all previous submittals by APS respecting this subject matter.

Though not discussed in Attachment 1, the impetus for this request stems in some measure from concerns arising from Supplement VIII added to Appendix C to 10 CFR Part 2 in the recent revision adopted (49 F.R. 8583, et seq., Mar. 8, 1984).

Paragraph A of the newly-added Supplement VIII provides:

"A. Severity I - Violations involving for example:

"In a general emergency, license failure to promptly: . . . (3) respond to the event (e.g., activate emergency response facilities and augment shift staff)."  
[Emphasis supplied].

The underscored language is repeated in paragraphs B and C defining Severity II and III violations for Site Area Emergencies and Alerts, respectively.<sup>1/</sup>

The use of the underscored language makes it apparent that the staffing augmentation "goals" established by NUREG-0654 (reiterated in NUREG-0737 and in NRC's IE Inspection Procedure 82205 also as "goals") have mutated into simplistic, rigid requirements of a response to an emergency. Thus, Supplement VIII does no more than provide for the assessment of civil penalties solely on the basis of a "head count" of personnel previously designated in an emergency plan.

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<sup>1/</sup> Though not repeated in paragraph D (Severity IV violations) of Supplement VIII, it is concluded by interpretation that the substance of the underscored language is included in paragraph D since paragraph D applies solely to "responses" to emergencies (assessment and notification are expressly excluded).

This result will follow even though:

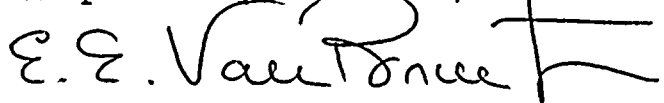
- (i) the assessment of the emergency event(s) is correct and timely;
- (ii) remedial measures taken are proper and timely;  
and
- (iii) appropriate notifications are initiated and completed in a timely manner.

Obviously, if these three objectives are achieved, the number and identity of personnel in licensee's emergency response organization are irrelevant. On the contrary, accomplishment of these objectives with less than the planned personnel would demonstrate either or both (i) the reserve strength of the licensee's response organization, or (ii) the planned augmentation is more than required.

It seems equally obvious that, if the attainment of the staffing augmentation "goals" is a primary objective, irrespective of success in responding to an emergency, then drill repetition and/or the steps identified in IE Inspection Procedure 82205 will provide the most effective means to achieve that objective and should be used in lieu of the imposition of civil penalties pursuant to NRC's enforcement policies.

If you have any further questions concerning these matters, please contact me at your earliest convenience.

Respectfully submitted,

  
E. E. Van Brunt, Jr.

cc: A. C. Gehr (w/a)  
E. A. Licitra (w/a)  
J. B. Martin (w/a)  
R. Zimmerman (w/a)  
G. Fiorelli (w/a)  
P. Robinson (w/a)



STATE OF ARIZONA       )  
                              ) ss.  
COUNTY OF MARICOPA    )

I, Edwin E. Van Brunt, Jr., represent that I am Vice President, Nuclear Production, of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.



Edwin E. Van Brunt, Jr.

Sworn to before me this 21st day of August, 1984.





Notary Public

My Commission Expires:

My Commission Expires April 6, 1987

08ACG0290





## ATTACHMENT 1

EMERGENCY RESPONSE ORGANIZATION STAFF AUGMENTATION

Arizona Public Service Company (APS) requests approval of two temporary deviations from the emergency response staffing augmentation goals of Supplement 1 to NUREG-0737 (Supp. 1).

Section 1. Deviation from the 30-Minute Augmentation Goal.a. Deviation.

The only temporary deviation from the 30-minute augmentation goal for which approval is requested is in the goal of an additional seven health physics (HP) technicians and one individual with core/thermal hydraulics expertise. (See Appendix A attached hereto).

b. Period During Which Deviation Is Required.

The period during which such deviation is required is limited to the period of operation of PVNGS Unit 1 from commencement of fuel loading through operation at power levels of 5% or less, (the 30-Minute Goal Deviation Period). Unit 2 Radiation Protection/Radwaste technician shift staffing (5 technicians per shift) will occur prior to Unit 1 exceeding 5% power. With the addition of Unit 2 shift staffing, the NUREG-0737, Supp. 1, Table 2, 30-minute staffing augmentation goals will be satisfied by on-shift personnel.

c. Compensating Measures or Circumstances.

(1) During the 30-Minute Goal Deviation Period the augmentation goals can be met at least one-fourth, and possibly as much as one-half of the time. During normal working hours when preoperational work is in progress on PVNGS Units 2 and 3, there will be more than an adequate number of qualified personnel on-site to meet all emergency response requirements. This will also be true during a significant, though unquantifiable, portion of the remainder of the time when preoperational work on Units 2 and 3 and other work on Unit 1 will require numerous people to be on-site on an overtime or additional shift basis.

(2) The Unit 1 shifts include 5 Radiation Protection/Radwaste technicians qualified to perform the functions required of HP technicians identified in Table 2 of Supp. 1. These 5 technicians provide 3 of the 7 additional HP technicians required to meet the 30-minute augmentation goal. Since all 5 of the shift Radiation Protection/Radwaste technicians are available immediately upon the occurrence of Notification of Unusual Event or other emergency, the functions for which the 30-minute augmented staff is required can be initiated prior to the expiration of 30-minutes, thus reducing or spreading out the work which must be accomplished after 30 minutes.

(3) The senior Radiation Protection (RP) technician on shift is trained and qualified to make dose



assessments and to provide the information used to develop protective action recommendations. A dose assessment computer is available to him in the Satellite Technical Support Center (STSC) to assist him in performing dose assessments and directing any field teams. Thus, he is qualified and capable to provide "senior health physics expertise."

(4) During a portion of the 30-Minute Goal Deviation Period, Unit 1 will be in a condition where either (i) the reactor vessel will be open with no inventory of fission products, or (ii) the reactor will be in a cold shutdown condition with a minimal fission product inventory. Consequently, during such portions of the 30-Minute Deviation Period the risks of an event resulting in radiological impacts, on-site or off-site, are de minimis, and the actual time when the proposed 30-minute deviation would be required will be only a portion of the 30-Minute Deviation Period. (This compensatory circumstance would not apply, of course, to drills which may be conducted during cold shutdown periods. Thus, the proposed deviation is required throughout the 30-Minute Deviation Period.)

(5) The regulations of NRC [NUREG-0737 and 10 CFR 50.47(d)] and decisions issued in fuel load and low power license cases [e.g. , Pacific G&E Co. (Diablo Canyon), ALAB-728 (5/18/83), 17 NRCI 777, 788-92] recognize the substantial reduction in risk and potential accident consequences for low power testing. Most significantly, the Commission



has found, with respect to the issue of augmentation times during low power tests:

"The time scale for taking actions to identify accident causes and mitigate accident consequences is much longer than at full power. This means the operators should have sufficient time to prevent a release from occurring. In the worst case, the additional time available (at least 10 hours) even for a postulated low likelihood sequence, which eventually results in release of the fission products accumulated at low power into the containment, would allow adequate precautionary actions to be taken to protect the public near the site." [46 FR 61133 (12/15/81) and 47 FR 30233 (7/13/82).] [Emphasis added.]

(6) In light of the Commission's findings cited above, it is clear that "in the worst case" occurring during the 30-Minute Deviation Period, there will be no need to perform off-site dose assessments or conduct off-site surveys for a very considerable period after the onset of the "worst case (i.e., up to 10 hours). Accordingly, a reduction in the augmentation goal for HP technicians from 7 to 4 is justified during the 30-Minute Deviation Period, and 3 of the 4 required will be from the Unit 1 on-shift personnel.

(7) APS commits during the 30-minute Goal Deviation Period to initiate a call to the EOF Director, Reactor Analyst and needed Radiation Protection/Radwaste technicians required for a Site Area Emergency immediately upon the occurrence of a Notification of Unusual Event. This action will accelerate the time when the TSC, OSC and EOF will be fully activated if the Unusual Event should escalate to a





higher emergency action level. It is acknowledged that this action will not impact the response to any event which is classifiable at its outset as an Emergency Action Level higher than a Notification of Unusual Event. Nonetheless, two points should be made in this regard:

(a) The NRC staff on several occasions estimated that "the level of risk associated with low power operation . . . is several orders of magnitude less than full power risk." [47 FR 30233 (7/13/82), fn. 1.]

(b) The TMI-2 accident, the "worst case" to date, started as a Notification of Unusual Event.

(8) The station shift includes a shift technical advisor (STA) who, in accordance with the technical specifications, is available to provide advisory technical support to the shift supervisor in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. The STA will be onsite and will be available in the control room of the affected unit within 10 minutes. During the 30-minute Goal Deviation Period the STA will be available to provide the requisite core/thermal hydraulics expertise until the Reactor Analyst position is staffed in the TSC.

Section 2. Deviation from the 60-Minute Augmentation Goal.a. Deviation.

Due to the remoteness of PVNGS, it is not possible to completely augment the staffing of the Technical Support Center (TSC) or the Emergency Operations Facility (EOF) within the 60-minute goal established by Table 2 of Supp. 1. In lieu thereof, APS proposes to adopt a 90-minute goal during the 60-Minute Goal Deviation Period.

b. Duration of 60-Minute Goal Deviation Period.

The 60-Minute Goal Deviation Period is the period which commences when fuel loading of Unit 1 begins and terminates (i) 18 months after operation of Unit 1 at power levels greater than 5% is authorized or (ii) when a license authorizing fuel loading of Unit 3 is issued, whichever is earlier.

c. Compensating Measures and Circumstances.

(1) The substitution of a 90-minute goal for the 60-minute goal stems from the remoteness of PVNGS from population centers attractive to the highly skilled personnel in the PVNGS operations organization. It reflects a trade-off between the desirability of a remote, sparsely populated desert site and the necessity of attracting and keeping the highly skilled personnel required for the operation of a nuclear facility. Any attempt to impose restrictions upon the choices of residential locations of highly skilled personnel is more than apt to be self-defeating.

(2) The fact that PVNGS is located in a remote, desert environment carries with it several compensatory measures and circumstances. First, the very low population density in each 90 sector within 10 miles of Unit 1 (currently estimated to be approximately 1,700 or less) simplifies the implementation of any protective action plan (e.g., evacuation; sheltering). Second, there are no institutions within 10 miles which would be in operation when the deviation would be required. [Two schools, each near the outer boundary of the 10-mile Emergency Planning Zone, would normally be in operation only when there are more than an adequate number of personnel at PVNGS to meet the 60-minute augmentation goal.] Third, there are only two state and local agencies with jurisdictional authority within 10 miles of PVNGS, i.e., the State of Arizona and the County of Maricopa; thus, the communication and coordination efforts are minimized. Fourth, because of the remoteness and the size of PVNGS, APS has elected to provide augmented shift staffing, including added auxiliary operators, radiation protection technicians and some round-the-clock maintenance personnel. (See Appendix A attached hereto and Section 2.c.(6) hereof).

(3) The 60-minute augmentation goal can and will be met during most of the 60-Minute Goal Deviation Period as a result of three circumstances:

(a) During one-third of all normal working days (about 25% of the total hours in each week)

throughout the 60-Minute Goal Deviation Period there will be more than an adequate number of qualified personnel to completely man and activate all emergency facilities within less than 30 minutes. In the context used in this subsection (3) "qualified personnel" means personnel trained and assigned to perform specific emergency functions with badges authorizing entry to specific emergency facilities.

(b) Throughout that portion of the 60-Minute Deviation Period after operation of Unit 1 at power levels greater than 5% is authorized (the Post 5% Deviation Period), Unit 1 will be in the power ascension test phase or the early stages of commercial operation, Unit 2 will be in the preoperational/fuel load/startup phase, and Unit 3 will be in the preoperational phase. Experience demonstrates that these activities necessitate considerable overtime and extra shift efforts. Consequently, it may be anticipated that during much of the off-normal working hours there will be a considerable pool of qualified personnel available onsite for augmentation of the Unit 1 emergency response organization to meet the 60-minute goal. This pool of overtime or extra shift personnel available from the Unit 1, 2 or 3 organizations or

the station organization is in addition to the augmented shift staffing of Units 1 and 2 who will be available at all times. Admittedly, it is not possible to predict in advance whether or not such a pool of qualified personnel available at any particular time will be of such numbers or diverse enough to permit complete manning of the EOF and TSC. Nevertheless, those onsite personnel will be at their assigned stations within 10-20 minutes and ready to perform their assigned functions well in advance of the 60-minute argumentation goal. Additionally, at any time when any qualified personnel are present onsite in addition to the augmented shifts of Units 1 and 2, the chances of meeting the 60-minute augmentation goal and providing a prompt, effective response to an emergency will be enhanced.

(c) When sufficient overtime or extra shift qualified personnel are not on-site, it can be expected that the augmentation of the emergency response organization will be substantially complete within the 60-minute goal. For example, the current PVNGS operations organization includes 72 radiation protection, chemistry and radwaste technicians of which 12 will be on shift at Units 1 and 2 at all times during the 60-Minute Goal Devia-

tion Period. Table 2 of Supp. 1 requires augmentation of the on-shift group by an additional 7 technicians. Therefore, there currently is a pool of 60 qualified technicians available to meet the 60-minute augmentation goal. Sixteen of the 72 technicians currently live within 50-minutes driving time of PVNGS.<sup>1/</sup> Accordingly, it is highly probable that under most circumstances the 60-minute augmentation goal will be achieved for HP and rad/chem technicians.

(4) To demonstrate that APS intends, even if the 60-minute deviation is authorized, to use its best efforts to achieve the 60-minute augmentation goal, APS commits to initiate the call to the EOF Director, Reactor Analyst and needed Radiation Protection technicians upon the occurrence of Notification of Unusual Event during the 60-Minute Goal Deviation Period. It is acknowledged that this action will not impact the response to any event which is classifiable at its outset as an Emergency Action Level higher than an Unusual Event. Nonetheless, it will be effective in a number of events, e.g., events such as TMI-2, and accordingly, the probability of not meeting the 60-minute augmentation goal when required will be reduced. [Also, in most drills, this

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<sup>1/</sup> Experience at PVNGS demonstrates that the driving times of emergency response personnel are subject to continuous change due to (i) changes in the PVNGS operations staff and (ii) changes in places of residence of individual members of such staff.

action will probably permit achievement of the 60-minute augmentation goal.]

(5) Notwithstanding the foregoing measures, it is still possible that several designated individuals, including specifically the EOF Director, one or two additional communicators and the Reactor Analyst, may not be available at the TSC or the EOF to meet the 60-minute augmentation goal. Consequently, several measures in addition to those previously identified have been taken to compensate for the potential delayed arrival of some or all of such personnel and to assure that the organization on site within 60 minutes after the classification of an event at a level higher than an Unusual Event can respond adequately and promptly. Such additional compensating measures include the following:

(a) The augmented shift staffing of Units 1 and 2.

(b) The provision of dedicated emergency facilities and equipment.

(c) The availability of unusually strong, redundant installed communication systems and equipment.

(d) The provisions made for early notification of key personnel.

(e) The training and qualifications of on-shift personnel.

(f) The capabilities provided by the Corporate Emergency Center.

Each of these additional compensating measures is discussed in the following sections.

(6) Augmented On-Shift Staffing. As previously stated, because of the size and remoteness of PVNGS, APS has augmented its on-shift staffing significantly in excess of NRC requirements. The availability of 10 Radiation Protection/Radwaste technicians on-shift at Units 1 and 2 during the Post-5% Deviation Period has already been noted (see Section 2.c(3)(b), page 2). Additionally, as shown in Appendix A, the Control Room on-shift staffing of each unit has been augmented by the addition of two auxiliary operators. This means a total of four auxiliary operators are available at all times for in-plant inspection and work on the affected unit and two additional auxiliary operators from the shift of the unaffected unit can be made available, if required, within 10 to 20 minutes. Also, the station on-shift staff includes mechanical, electrical and I&C maintenance personnel. (See Appendix A). Such augmented on-shift staffing is significant in several ways:

(a) It permits activation of the OSC in less than 30 minutes.

(b) It provides immediately a significant pool of qualified personnel to the Emergency Coordinator (i.e., initially the Shift Supervisor of





the affected unit or the unaffected unit) to conduct in-plant inspections, perform repairs and take other corrective actions.

(c) It permits immediate access control and appropriate radiation protection for such early in-plant inspections, repairs and other corrective actions and for prompt search and rescue activities.

(d) It permits the expedited commencement and more expansive scope of rescue operations and first-aid activities.

(e) It permits an expedited and expanded scope of in-plant and onsite radiological surveys.

In all, the augmented on-shift staffing provides the means by which vital emergency response activities can be (i) initiated more expeditiously (i.e., within 30 minutes) and (ii) more rapidly expanded in scope. Consequently, the tasks or functions otherwise required to be performed after 60 minutes are reduced and the information available at 60 minutes will be enhanced.

(7) Dedicated Emergency Facilities. The Satellite Technical Support Center (Satellite TSC), the TSC and the EOF are all dedicated facilities with equipment and facilities in place. Consequently, each of these facilities is physically capable of activation within less than 10 minutes. None of these facilities is used for any other purpose which would

delay or interfere with its activation for its intended functions.

The installed equipment at each of these facilities, described in detail in Chapter 7 of the PVNGS Emergency Plan, is comprehensive and state-of-the-art and has the capability of providing promptly the information required to respond effectively to emergency situations.

Because the Satellite TSC is a unique emergency facility apparently not found at other nuclear plants, and because it provides several advantages in promptly and effectively responding to all Emergency Action Levels, the following description of the facility and its function is presented as one of the compensating features for the deviation from the 60-minute augmentation goal.

(a) In the event of verifying an Emergency Action Level and classifying an event the Shift Supervisor of the affected unit immediately activates the Satellite TSC adjacent to the Control Room of the affected unit and assumes the functions of the Emergency Coordinator and the EOF Director. The Shift Supervisor of the unaffected unit, at the discretion of the affected unit's Shift Supervisor, promptly reports to the Satellite TSC of the affected unit (approximately 10 minutes) and assumes the functions of Emergency Coordinator and EOF Director, and the Shift Supervisor of the affected



unit returns to and takes charge of the Control Room. Other personnel reporting immediately to the Satellite TSC of the affected unit include the STA, one communicator, and the senior Radiological Protection Technician on shift.

(b) Upon the arrival of one of the designated Emergency Coordinators at the TSC, the emergency coordination functions are transferred to the TSC.

(c) Thereafter, the Satellite TSC serves solely as an extension of the TSC available to assist the Emergency Coordinator and the Control Room as called upon to do so.

(d) During the initial stages of an emergency, prior to activation of the other onsite and offsite emergency response facilities, the following activities will take place in the Satellite TSC:

- (i) Environmental Assessment (offsite dose projections)
- (ii) Field Monitoring Team direction
- (iii) Technical analysis by the Shift Technical Advisor (STA)
- (iv) Emergency management by the Emergency Coordinator (EC), i.e., the Shift Supervisor of the affected unit, initially and the Shift Supervisor



of the unaffected unit when he arrives (approximately 10 minutes).

- (v) Initial notifications, including protective action recommendations.

The equipment installed in each Satellite TSC which permits the performance of these functions is described in Chapter 7 of the PVNGS Emergency Plan.

(e) Because of its location adjacent to the Control Room, the capability provided by installed equipment, the installed communication and notification facilities and the manning provided by the augmented on-shift staffing the Satellite TSC permits:

- (i) Immediate activation of the notification system outside the Control Room.
- (ii) Early initiation and coordination of functions ultimately performed through the TSC.

(8) Communication Facilities and Equipment. The dedicated communication facilities and equipment at the emergency response facilities are state-of-the-art, exceptionally strong and redundant. A description of such facilities and the communication links which are provided is set forth in Chapter 7 of the PVNGS Emergency Plan. In addition to such communication facilities, the designated Emergency Coordinators and EOF Directors (primary and alternates) are provided





radio telephones installed in their automobiles. This will provide a communication link with these key personnel while they are en route to their assigned locations.

(9) Early Notification System. The automated early notification system described in Chapter 7 of PVNGS Emergency Plan will be enhanced by the distribution of Pocket Pagers to approximately 50 key designated emergency response personnel. Early notification messages can be simultaneously communicated to all such key personnel wherever they are located in the Phoenix metropolitan area 24 hours a day, seven days a week.

(10) Qualifications of On-Shift Personnel. As previously noted, the Shift Technical Advisor (STA) is trained and qualified to provide the requisite core/thermal hydraulics expertise until the Reactor Analyst arrives at the TSC [see Section 1.c(8), page 5] and the senior Radiation Protection technician on-shift is trained and qualified to perform dose assessments, recommend protection actions and direct field radiological survey teams [see Section 1.c (3), page 2].

(11) Corporate Emergency Center (CEC). The CEC will be fully activated within 60 minutes of the classification of a Site Area Emergency or General Emergency. The CEC organization includes managerial and technical personnel who can provide assistance to the Emergency Coordinator, particularly in the area of communications with other offsite



emergency centers and agencies, until the designated EOF Director arrives at the EOF.

d. Conclusion.

In summary, APS deems the adoption of a 90-minute augmentation goal in lieu of the 60-minute goal specified in Table 2 of Supp. 1 to be warranted because of its short-term, temporary duration and the following compensatory measures and circumstances:

- (1) The necessity of attracting and keeping highly skilled personnel required for operation of a nuclear facility in a remote, desert environment.
- (2) The advantages inherently attached to a remote site with very low population densities in the surrounding area and with minimal state and local jurisdictional agencies.
- (3) The relatively high probability that the 60-minute goal will be achieved.
- (4) The commitment of APS to initiate the call of the EOF Director, Reactor Analyst and needed Radiation Protection technicians upon the occurrence of Notification of an Unusual Event.
- (5) The augmented normal shift staffing.
- (6) The provision of a Satellite TSC adjacent to the Control Room which will expedite the notification and response to a classified event.

- (7) The activation within 60-minutes of the CEC with managerial and technical manning and equipment capable of providing assistance in communications with other offsite emergency centers.
- (8) The facts that (i) the Satellite TSC, the TSC and EOF are dedicated facilities with equipment in place ready for immediate activation and (ii) none of such facilities or equipment is used for any other purpose that may delay or interfere with their activation.
- (9) The augmented staff of each shift will permit very prompt activation of emergency equipment and provide an early start on several emergency functions.
- (10) The extensive, state-of-the-art equipment installed and available at the Satellite TSC, the TSC and the EOF.
- (11) The strong, comprehensive, redundant emergency communication and notification systems which have been installed at PVNGS.

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TABLE 1COMPARISON OF NRC SHIFT STAFFING REQUIREMENTS  
WITH PVNGS AUGMENTED SHIFT STAFFING

<u>Position Title or Expertise</u>	<u>NRC* Required On Shift</u>	<u>PVNGS Augmented Shift (a)</u>
Control Room		
Shift Supervisor (SRO)	1	1
Assistant Shift Supervisor (SRO)	1	1
Control Room Operators	2	2
Auxiliary Operators	2	4
Emergency Coordinator***	1**	1 (b)
Notifications/Communications***	1	1 (c)
EOF Director	-	1 (b)
Radiological Assessment		
Senior Health Physics Expertise	-	1 (d)
Offsite Surveys	-	} 4 (e)
Onsite Surveys (out-of-plant)	-	
Inplant Surveys	1	
Chemistry/Radio Chemistry	1	1
Plant System Engineering, Technical Support		
Shift Technical Advisor	1	1 (f)
Core/Thermal Hydraulics	-	1 (g)
Electrical	-	-
Mechanical	-	-
Plant System Engineering, Repair and Corrective Actions		
Mechanical Maintenance	1**	1 (f)
Rad Waste Operator	-	-
Electrical Maintenance	1**	1 (f)
Instrument and Control	-	1 (f)
Radiation Protection		
Access Control, Search and Rescue, etc.	2**	2 (h)
Rescue Operations and First-Aid	2**	2 (h)
Firefighting	Tech. Specs.	Tech. Specs.
Security	Security Plan	Security Plan
Total (excl. Firefighting and Security)	10	18



TABLE 2

COMPARISON OF TOTAL 30-MINUTE AUGMENTED STAFF REQUIREMENTS  
WITH PVNGS TOTAL EMERGENCY STAFF AT 30 MINUTES

Position Title or Expertise	NRC Total Augmented Staff At 30-Minutes	PVNGS Total Emergency Staff at 30 Minutes	
		Pre-5% Power Level (i)	Post-5% Power Level (j)
Control Room			
Shift Supervisor (SRO)	1	1	1
Assistant Shift Supervisor (SRO)	1	1	1
Control Room Operators	2	2	2
Auxiliary Operators	2	4	4
Emergency Coordinator***	1**	1 (b)	1 (b)
Notifications/Communications***	2	2 (c)	2 (c)
EOF Director	-	1 (b)	1 (b)
Radiological Assessment			
Senior Health Physics Expertise	1	1 (d)	1 (d)
Offsite Surveys	5	4 (e)	6 (e)
Onsite Surveys (out-of-plant)			
Inplant Surveys			
Chemistry/Radio Chemistry	1	1	1
Plant System Engineering, Technical Support			
Shift Technical Advisor	1	1 (f)	1 (f)
Core/Thermal Hydraulics	1	1 (g)	1 (g)
Electrical	-	-	-
Mechanical	-	-	-
Plant System Engineering, Repair and Corrective Actions			
Mechanical Maintenance	1**	1 (f)	1 (f)
Rad Waste Operator	-	-	-
Electrical Maintenance	1	1 (f)	1 (f)
Instrument and Control	1	1 (f)	1 (f)
Radiation Protection			
Access Control, Search and Rescue, etc.	2	2 (h)	2 (e)
Rescue Operations and First-Aid	2**	2 (h)	2 (h)
	Local Supp	Local Supp	Local Supp
Firefighting	Tech Specs Local Supp	Tech Specs Local Supp	Tech Specs Local Supp
Security	Security Plan	Security Plan	Security Plan
Total (excl. Firefighting and Security)	21	18	22





TABLE 3

COMPARISON OF TOTAL 60-MINUTE AUGMENTED STAFF REQUIREMENT  
WITH PVNGS EMERGENCY STAFF AT 60 MINUTES  
DURING POST-5% DEVIATION PERIOD

<u>Position Title or Expertise</u>	<u>NRC Total Augmented Staff At 60-Minutes</u>	<u>Expected PVNGS Total Emergency Staff At 60 Minutes (j)</u>
<b>Control Room</b>		
Shift Supervisor (SRO)	1	1
Assistant Shift Supervisor (SRO)	1	1
Control Room Operators	2	2
Auxiliary Operators	2	4
Emergency Coordinator***	1	1 (b)
Notifications/Communications***	4	4 (1)
EOF Director	1	1 (b)
<b>Radiological Assessment</b>		
Senior Health Physics Expertise	1	1 (d)
Offsite Surveys	11	6 (e)
Onsite Surveys		
Inplant Surveys		
Chemistry/Radio Chemistry	1	1
<b>Plant System Engineering, Technical Support</b>		
Shift Technical Advisor	1	1 (f)
Core/Thermal Hydraulics	1	1 (g)
Electrical	1	-
Mechanical	1	-
<b>Plant System Engineering, Repair and Corrective Actions</b>		
Mechanical Maintenance	1	1 (f)
Rad Waste Operator	1	1 (k)
Electrical Maintenance	2	1 (f)
Instrument and Control	1	1 (f)
<b>Radiation Protection</b>		
Access Control, Search and Rescue, etc.	4	2 (e)
<b>Rescue Operations and First-Aid</b>	2**	2 (h)
	Local Supp.	Local Supp.
<b>Firefighting</b>	Tech. Specs. Local Supp.	Tech. Specs. Local Supp.
<b>Security</b>	Security Plan	Security Plan
<b>Total (excl. Firefighting and Security)</b>	<b>36</b>	<b>25</b>



FOOTNOTES:

- (a) Positions indicated are per unit except where noted.
- (b) Position immediately filled by affected unit Shift Supervisor (refer to Section 4.2.2.2 in Emergency Plan) to be replaced by unaffected unit Shift Supervisor in STSC. Responsibilities transferred to the Emergency Coordinator in the TSC and the Emergency Operations Director in the EOF as soon as these positions are staffed.
- (c) Auxiliary Operator(s) on shift of affected unit.
- (d) Senior Radiation Protection Technician on shift of affected unit.
- (e) Four Radiation Protection technicians on shift of affected unit; can be used for inplant, onsite or offsite surveys and/or radiation protection. When Unit 2 starts fuel load, four additional technicians on shift of unaffected unit will be available (10-20 minutes) for surveys and/or radiation protection.
- (f) This position is filled on a station shift basis.
- (g) Position initially filled by STA.
- (h) Provided by shift personnel (Unit 1 and/or 2) assigned other functions, e.g., auxiliary operators, RP technicians, maintenance personnel.
- (i) Unit 1 and Station shift only. Three additional people are available after Unit 2 fuel load.
- (j) Shift of affected unit (available immediately) with augmentation where noted from shift of unaffected unit (available 10-20 minutes).
- (k) Available from shift of unaffected unit.
- (l) Two on-shift auxiliary operators of affected unit, available immediately. Two additional from shift of unaffected unit, available 10-20 minutes.

NOTES (From NUREG-0737, Supplement 1, Table 2):

- \* For each unaffected nuclear unit in operation, maintain at least one shift foreman, one control room operator and one auxiliary operator, except that units sharing a control room may share a shift foreman if all functions are covered.
- \*\* May be provided by shift personnel assigned other functions.
- \*\*\* Overall direction of facility response to be assumed by EOF director when all centers are fully manned. Director of minute-to-minute facility operations remains with senior manager in technical support center or control room.
- \*\*\*\* May be performed by engineering aide to shift supervisor.

