

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8906140042 DOC. DATE: 89/06/06 NOTARIZED: NO DOCKET #  
 FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528  
 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529  
 STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530  
 AUTH. NAME CONWAY, W. F. AUTHOR AFFILIATION Arizona Public Service Co. (formerly Arizona Nuclear Power  
 RECIP. NAME Document Control Branch (Document Control Desk)

SUBJECT: Advises of actions initiated for development & maint of high quality emergency operations procedures, including upgrade project to revise procedures & related administrative control procedures, per 890313-17 insp.

DISTRIBUTION CODE: IE35D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5  
 TITLE: Emergency Preparedness-Appraisal/Confirmatory Action Ltr/Exercise Rep

NOTES: Standardized plant. 05000528  
 Standardized plant. 05000529  
 Standardized plant. 05000530

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD5 PD	1 1	CHAN, T	1 1
	DAVIS, M	1 1	DAVIS, M.	1 1
INTERNAL:	NRR/DREP/EPB 10	1 1	NRR/PMAS/ILRB12	1 1
	NUDOCS-ABSTRACT	1 1	OC/LFMB	1 0
	<del>REG FILE</del> 02	1 1	RGN5 FILE 01	1 1
	RGN2/DRSS/EPRPB	1 1		
EXTERNAL:	LPDR	1 1	NRC PDR	1 1
	NSIC	1 1		
NOTES:		1 1		

TOTAL NUMBER OF COPIES REQUIRED: LTTR 15 ENCL 14

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8906140042 DOC.DATE: 89/06/06 NOTARIZED: NO DOCKET #  
 FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528  
 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529  
 AUTH.NAME AUTHOR AFFILIATION  
 CONWAY,W.F. Arizona Public Service Co. (formerly Arizona Nuclear Power  
 RECIP.NAME RECIPIENT AFFILIATION  
 Document Control Branch (Document Control Desk)

SUBJECT: Identifies actions initiated for development & maint of high quality emergency operations procedures,per insp.

DISTRIBUTION CODE: IE35D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5  
 TITLE: Emergency Preparedness-Appraisal/Confirmatory Action Ltr/Exercise Rep

NOTES:Standardized plant. 05000528  
 Standardized plant. 05000529

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD5 PD	1 1	CHAN,T	1 1
	DAVIS,M	1 1		
INTERNAL:	NRR/DREP/EPB 10	1 1	NRR/PMAS/ILRB12	1 1
	NUDOCS-ABSTRACT	1 1	OC/LEMB	1 0
	REG FILE 02	1 1	<u>RGN5 FILE 01</u>	1 1
	RGN2/DRSS/EPRPB	1 1		
EXTERNAL:	LPDR	1 1	NRC PDR	1 1
	NSIC	1 1		
NOTES:		1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 14 ENCL 13

I  
I  
I  
S  
R  
I  
D  
S  
/  
A  
D  
D  
S

**Arizona Public Service Company**

P.O. BOX 53999 • PHOENIX, ARIZONA 85072-3999

WILLIAM F. CONWAY  
EXECUTIVE VICE PRESIDENT  
NUCLEAR

102-01290-WFC/TDS/JJN  
June 6, 1989

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

Reference: Letter from R. P. Zimmerman, Director, Division of Reactor Safety and Projects, to Mr. D. Karner, Executive Vice President, dated April 28, 1989

Dear Sirs:

Subject: Emergency Operating Procedures  
File: 89-002-493

On March 13, 1989 through March 17, 1989, NRC Region V and Office of Nuclear Reactor Regulation personnel conducted a special team inspection of PVNGS Emergency Operating Procedures (EOPs). As a result of the inspection, the team concluded that the PVNGS operating staff can utilize the EOPs to manage and mitigate serious operational events; however, your staff recommended that EOPs be improved particularly regarding human factors aspects.

The Operations Standards Section at PVNGS has performed a detailed review of the referenced inspection report and NUREG 1358. As a result, APS has initiated the following actions for the development and maintenance of high quality Emergency Operations Procedures.

EOP UPGRADE PROJECT

An EOP Upgrade Project has been formed to develop and revise the EOPs and related administrative control procedures. A multi-disciplinary approach will be used to provide appropriate resources for the completion of the EOP Upgrade Project. The Operations Standards Section will be responsible for the overall coordination of the Project and development of the new EOPs. To assist the Operations Standards personnel, human factors specialists have been contracted. Technical assistance will be provided by Engineering personnel, Shift Technical Advisors (STAs), and Training. Verification and validation will be performed by Operations Standards Personnel, Training, and Unit Operations personnel.

8906140042 890606  
PDR ADOCK 05000528  
Q PNU

IE35  
11

### EOP DEVELOPMENT

The basis for the new EOP development will be the revision of the procedure writers' guides and technical guidelines. The technical guidelines will define principal actions for the procedural steps and the procedure writers' guide will provide the administrative control of the procedure format.

The writers' guide will incorporate human factors principals to develop high quality, easily understood and usable procedures which eliminate the heavy reliance on operator judgement and discretion. The human factors specialists will be involved in the rewrite of the procedure writers' guide and will provide training for the Operation Standards procedure writers in the principals and application of human factors considerations. Included in the development of the writers' guide will be the review the of NUREG/CR 5228 "Techniques for Preparing Flowchart Format EOP" for applicability.

Following the revision of the writers guide, Operations Standards personnel, with the assistance of the human factors specialists, will develop new EOPs.

The technical basis for the new EOPs will be NUREG 0899, "Criteria for Preparation and Revision of Emergency Operating Procedures," and CEN 152 revision 3, "CE EP Guidelines."

An integral part of the development of the technical guidelines will be resolution of plant specific steps within the EOPs. The Engineering Evaluations Department (EED) will coordinate the resolution of technical issues such as: specific criteria for procedural steps in the EOPs to minimize reliance on operator judgement and discretion, determination of plant design basis (e.g., setpoints), equipment operation under abnormal conditions, and the development of documentation for variances between CEN 152 revision 3 and the PVNGS technical guidelines. EED will coordinate the resolution through the Engineering Evaluations Department, Nuclear Fuel Department, or Nuclear Engineering as appropriate. Following the development of the PVNGS technical guidelines, these engineering departments will review the technical guidelines and basis to verify the overall technical adequacy and the proper interpretation and use of the FSAR and CEN-152.

The new EOPs will be reviewed by Operations Standards personnel with the assistance of the human factors specialists, STAs, and selected Unit Operations personnel. Following this review, the new EOPs will be distributed for verification and validation.

### VERIFICATION AND VALIDATION

The STAs will perform a verification of the EOPs with the additional perspective as licensed operators. They will also review the EOPs for technical adequacy and human factors considerations. The STAs are knowledgeable of the plant design and operations. Furthermore, the STA's are

responsible for the PVNGS Incident Investigation Program and have received extensive training and experience in the Human Performance Evaluation System (HPES).

The Quality Assurance (QA) Department will provide an independent audit and monitoring of the EOP upgrade process and a review of selected EOPs. The Nuclear Safety Department (NSD) will also provide independent oversight of the EOP upgrade process. NSD will perform selected reviews of the EOPs for potential nuclear safety concerns and confirmation of technical adequacy.

Plant Operators and Licensed Training personnel will perform EOP verification and validation. This will include a review and use of the EOPs on plant walk-throughs and during postulated accident scenarios on the plant simulator as practical. The simulated use of these procedures will validate that the equipment configuration is applicable to the procedure and that appropriate diagnostic instrumentation is available to aid the operators in accident mitigation.

Included with the Plant Operator's validation of the EOP will be an evaluation of human factors considerations to identify operator performance deficiencies. Feedback from the practical application and the use of the new EOPs will be utilized to identify necessary changes in the procedure writers' guide, technical guidelines, EOPs, and/or licensed operator training.

#### ADDITIONAL INFORMATION

The schedule for the development, review, verification, and validation of the new EOPs is provided in Attachment 1. The expected implementation date of the new EOPs is July 1990.

The specific and general deficiencies identified in the subject inspection report and previous inspection reports will be addressed in the EOP Upgrade Project. Following the initial review of the draft EOPs, the EOPs will be reviewed again to identify the resolution of the deficiencies discussed in the subject inspection report.

As stated in the subject inspection report, the "operating staff can utilize the EOPs to manage and mitigate serious operational events." APS concurs with this assessment and, therefore, does not plan interim changes/revisions to the EOPs which would consume resources that could otherwise be utilized in the EOP Upgrade Project. Additionally, retraining the operators on interim changes/revisions and again when the new, fully revised EOPs are implemented could result in possible confusion, uncertainty, and other human performance deficiencies. A single, major revision will also minimize the impact on training personnel and allow greater attention to the verification and validation program.

Following the completion of the EOP Upgrade Project, the balance of operating procedures (abnormal and normal) will be reviewed and rewritten/revised as necessary. The lessons learned from the EOP Upgrade Project can then be incorporated into the revision of the remaining operating procedures.

In regards to the concerns expressed in the referenced letter about simulator fidelity, APS responded on February 21, 1989 to Mr. J. B. Martin on this issue. APS recognizes the deficiencies in the simulator model and has taken interim measures to minimize "negative training." APS has an ongoing Simulator Upgrade Program to identify and correct simulator deficiencies. The current schedule to implement the modifications to correct the deficiencies is expected to support the validation process for new EOPs.

If you have any questions on this matter, please contact T. D. Shriver, Compliance Manager at (602) 393-2521.

Very truly yours,



William F. Conway  
Executive Vice President  
Nuclear

WFC/TDS/JJN/kj

cc: D. B. Karner  
J. B. Martin  
R. P. Zimmerman  
T. J. Polich  
T. L. Chan  
M. J. Davis

ATTACHMENT 1  
 COMPLETION DATES  
 FOR EOP UPGRADE PROJECT

<u>Milestones</u>	<u>Project Task</u>
October 1, 1988 to July 27, 1989	Revise EOP Related Administrative Control Procedures: Revise writers' guide for human factors, Revise Administrative Control procedures to provide multi-disciplinary evaluation, and Technical review and approval of Administrative Control procedures.
January 16, 1989 to July 27, 1989	Revise EOP Technical Guidelines: Evaluate and upgrade technical guidelines per CEN 152, Provide technical basis for plant specific procedural steps, Incorporate NRC/INPO/NSD findings, and Technical review of technical guidelines.
July 27, 1989 to October 27, 1989	Revise EOPs: Revise EOPs, Walk-down revised procedures, and Prepare procedures for verification process.
October 27, 1989 to February 28, 1990	Verification of Revised EOPs: Perform verification of revised procedures, Resolve any identified concerns or comments, Revise procedures as appropriate, and Reverify revised procedures.
October 27, 1989 to February 28, 1990	Human Factors Evaluation of Revised EOPs: Obtain services of consultant to provide contract assistance to review EOPs, and Review and evaluate procedures human factors concerns.
February 28, 1990 to May 22, 1990	Validation of Revised EOPs: Validation of revised EOPs, Resolve any identified concerns or comments, Revise any identified concerns or comments, and Reverify and Revalidate revised procedures as appropriate.
May 30, 1990 to July 5, 1990	Train Operating Crews on the Revised Procedures.
July 5, 1990	Revised Procedures Become Effective.