



102-07377-MAM/DJH  
November 8, 2016

**Palo Verde  
Nuclear Generating Station**  
P.O. Box 52034  
Phoenix, AZ 85072  
Mail Station 7636  
Tel 623 393 4972

T. J. Farina, Chief Examiner  
U.S. Nuclear Regulatory Commission, Region IV  
1600 E. Lamar Blvd.  
Arlington, TX 76011-4511

Dear Sir:

Subject: **Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2, and 3  
Docket No. STN 50-528, 50-529, 50-530  
2016 Reactor Operator and Senior Reactor Operator Post  
Examination Documents**

Arizona Public Service Company (APS) has completed its review of the initial operator licensing examination conducted October 28, 2016 thru November 3, 2016. Per NUREG 1021, Rev 10, Operator Licensing Examination Standards for Power Reactors, Section ES-501 (C.1.a), this letter provides the required post examination documents. There were no substantive comments made by the applicants following the written examination. The following examination documents were requested and are enclosed:

- Graded written examinations including each applicant's original answer sheet and exam cover sheet
- Two clean copies of each applicant's answer sheet (made prior to grading)
- Master examination(s) and answer key(s), annotated to indicate any changes made while administering and grading the examination(s)
- Any questions asked by and answers given to the applicants during administration of the written exam
- Written examination seating chart
- Completed ES-403-1, Written Examination Grading Quality Checklist, signed by facility supervisor or manager
- Results of any written exam performance analysis that was performed, with recommended substantive changes
- Justification for any recommended exam changes (N/A, none recommended)
- Copies of condition reports written or to be written as a means to improve exam processes, procedure quality, training quality, exam security, simulator fidelity, and any other general topics that relate to the exam process

As discussed with the chief examiner, APS will obtain post-exam signatures from individuals who had detailed knowledge of any part of the operating tests or written examination and electronically forward completed Form(s) ES-201-3, "Examination Security Agreement," with the appropriate pre- and post-examination signatures.

**Withhold from Public Disclosure Under 10 CFR 2.390 - Exam Security**  
**This page is decontrolled upon separation from the enclosures.**

102-07377-MAM/DJH

T. J. Farina

USNRC, Region IV

Operator License Post Examination Documents

Page 2

APS requests that the NRC Region IV office delay public release of the proposed and final written examinations and answer keys for a period of 24 months from the date of the examination completion.

There are no commitments made to the NRC by this letter.

Please call Joe Allison, Nuclear Training Section Leader, at (623) 393-6335 if you have questions or require additional information.

Sincerely,



Mark A. McGhee

Regulatory Affairs Department Leader

MAM/DJH

**Enclosures:**

Hard Copy

1. Graded written examinations including each applicant's original answer sheet and exam cover sheet
2. Two copies of each applicant's answer sheet (made prior to grading)
3. Master examination(s) and answer key(s), annotated to indicate any changes made while administering and grading the examination(s)
4. Any questions asked by and answers given to the applicants during administration of the written exam
5. Written examination seating chart
6. Completed ES-403-1, Written Examination Grading Quality Checklist, signed by facility supervisor or manager
7. Results of any written exam performance analysis that was performed, with recommended substantive changes
8. Justification for any recommended exam changes (N/A, none recommended)
9. Copies of condition reports written or to be written as a means to improve exam processes, procedure quality, training quality, exam security, simulator fidelity, and any other general topics that relate to the exam process

cc: (w/o enclosures)

K. M. Kennedy NRC Region IV Regional Administrator

V. G. Gaddy NRC Region IV, Chief, Operations Branch

C. A. Peabody NRC Senior Resident Inspector for PVNGS

L. A. Hurley NRC Region IV, Licensing Assistant, Operations Branch

**Written Examination Question Assessment**

Questions >50% of the candidates missed and other question comments

Question #	Success Rate	Description
73	30%	<p>Question asked for the maximum background radiation levels when using a personnel frisker and for the minimum detected cpm above background which requires RP notification.</p> <p>All 3 of the wrong answers were chosen by at least one applicant and two of the wrong answers were chosen by 7 applicants each, indicating a gap in knowledge of personnel frisker requirements.</p>
86	14%	<p>Question 86 asked how long the unit has until it must be in MODE 3 (starting in MODE 1) when 3 Pressurizer Safety Valves are declared inoperable.</p> <p>9 of the 12 applicants who missed this question answered 'B' because they thought they had the initial 15 minutes to correct the situation prior to the 6 hour clock to be in MODE 3 began.</p>
89	43%	<p>Question 89 asked what compensatory actions were required in order to comply with TLCO 3.3.108, FBEVAS, and the ODCM, following a loss of Fuel Building Ventilation Radiation Monitor RU-145 while moving fuel.</p> <p>All 8 applicants who missed this question answered the compliance with TLCO 3.3.108 correctly but did not know the requirements to comply with the ODCM.</p>
92	43%	<p>Question 92 asked whether or not the fuel handling machine manual handwheel could be used to move the bridge and trolley following the actuation of the mast bumper interlock and whether or not the Fuel Handling Event Recovery Checklist from Conduct of Shift Operations was required to be completed.</p> <p>5 of the 8 applicants missed the question due to not knowing the manual handwheel could be used to move the bridge and trolley when the mast bumper interlock was actuated and 3 of the 8 who missed the question did not know the checklist was required.</p>

All questions missed by any candidate have been reviewed and there are not other issues identified with any other questions.

**Administrative Task Assessment**

No issues identified.

**JPM Assessment**

No issues identified.

**Scenario Assessment**

No issues identified.

**Written Examination Scores**

RO Exam Average (for RO applicants): 91.3%

RO Exam Average (for SRO applicants): 93.8%

RO Exam Average (for all applicants): 92.8%

SRO Exam Average: 81.1%

Overall Exam Average: 90.9%