

Wolf Creek 2006 Initial License Exam  
Exam Analysis of Questions missed by 50%  
or more of the applicants and facility response.

Question #3: Missed by 4 of 6 candidates.

The question asked the candidate to determine the effect of placing an unborated cation bed in service. Three of the four incorrect answers chose "Lithium concentration will rise". This is incorrect. A cation bed will decrease lithium concentration.

The other incorrect selection was "A small rise in letdown flow". Since letdown flow is controlled by a fixed orifice and throttle valve, an increase in pressure would cause a small increase in letdown flow. An increase in RCS temperature would attempt to increase RCS pressure however PZR spray valves would open keeping pressure relatively constant.

Discussion with candidates indicated they assumed that Program PZR Level would increase right away and charging flow would increase.

Facility Response: Questions stands as is. Remediation provided.

Question #12: Missed by 3 of 6 candidates.

This question asked the power supply to a 480 VAC safety related valve. Three candidates incorrectly chose distractor "C. NG03". The correct answer was "A", NG01". "C" was the most credible incorrect distractor as it is the other 480 VAC load center on the selected safety train.

Discussion with candidates indicated they had to choose between the two.

Facility Response: Questions stands as is. Remediation provided.

Question #17: Missed by 3 of 6 candidates.

This question asked the candidate to determine the trend in AFW flow necessary to maintain stable S/G level during a cooldown immediately following a reactor trip.

Two candidates chose distractor "B", "AFW flow requirements are constant as long as the cooldown rate is constant". This is incorrect. Decay heat will decrease significantly requiring less AFW flow to maintain the cooldown. One candidate chose "D", "More AFW flow is required to maintain SG level due to the increased density of the SG water as it cools". This is incorrect. This effect is insignificant when compared to the decreased decay heat, and is

partially off-set by the increased enthalpy change associated with lower pressure/temperature in the S/G. Discussion with candidates indicated they had not considered the reduction in decay heat.

Facility Response: Questions stands as is. Remediation provided.

Question #40: Missed by 3 of 6 candidates.

This question asked the candidate to determine why a temperature change occurs across a leaking code safety valve. Three candidates missed this question.

One of the candidates chose distractor "A", "The leak is too small to overcome ambient heat loss to the containment". This is incorrect. The question states that the tailpipe temperature is increasing, which would not be the case if ambient losses were greater than leak capacity.

Two candidates chose distractor "B", "The fluid temperature corresponds to the PRT saturation pressure because a large amount of energy is lost in a throttling process". This is incorrect because a throttling process is considered an iso-enthalpic process—basically no energy is lost through the process.

Discussion with candidates indicated the wording/terminology in the question was slightly different than what they were used to.

Facility Response: Questions stands as is. Remediation provided.

Question #87: Missed by 2 of 3 SRO candidates

This question asked the candidate to select which trip instrumentation is designed to prevent DNB challenges.

Two candidates selected distractor "D", "Power range high neutron flux and reactor coolant flow". This answer is also a correct answer. Reactor coolant flow is an obvious DNB protection, and power range high neutron flow, according to T/S Bases, 3.3.1, page 3.3.1-9, "The Power Range Neutron Flux - High trip Function ensures that protection is provided, from all power levels, against a positive reactivity excursion leading to DNB during power operations."

Facility Response: This was not noted during the validation process of the question that D was also be correct. Recommend accepting answers B and D as correct. References provided.

Question 87 is the only question that Wolf Creek feels must be corrected. The remaining four questions determined that there was a deficiency in the knowledge level of the candidates. Corrective Action document PIR 2006-0611 was written and remediation for the all questions missed was held with the candidates on 09 March 2006.

  
03/10/2006

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Excerpt from PIR 2006-0611

The 2006 Initial License written exam was administered on March 3<sup>rd</sup>, 2006. 50% or more of the candidates missed five questions. NUREG 1021, OPERATOR LICENSING EXAMINATION STANDARDS FOR POWER REACTORS, requires an exam analysis be performed on these questions to determine if the result is due to a knowledge/training issue or a question flaw.

The exam analysis was performed. It was determined that one of the five questions had two correct answers. The remaining four questions will stay as written.

Remediation for the missed questions was held on March 9<sup>th</sup>, 2006 with all applicants. Explanations were provided to justify the correct answers and eliminate the incorrect answers. All candidates now understand the basics for the correct answers and why their choices were incorrect.

All necessary actions have been completed. This PIR may be closed.