

# **BYRON INITIAL LICENSE EXAM**

**OCTOBER 29 and  
NOVEMBER 5-9, 2001**

**NRC Comments to the Facility-  
Developed Written Exam  
and Operating Test**

**(See the October, 2001 Braidwood  
post-exam retention package for the  
comments on the written examination)**

## Comments on the BYRON Operating Exam Material

JPM/Scenario Event Number	Comment(s)
<p>B.1.a (emergency boration)</p> <p><b>UNSAT,</b></p>	<p><u>NRC:</u> As written, the JPM has no safety significance. If the applicant failed to recognize that boration flow was 15 gpm versus 30 gpm, boration would still occur and rods would step out to initial position. Also, BAR 1-10-B6, "ROD BANK INSERTION LIMIT," Step D.4 simply directs the operator to borate as necessary to restore the desired rod height. No particular method, boron concentration or boration rate is listed.</p>
	<p><u>LICENSEE RESPONSE:</u> The licensee agreed and modified the JPM to cause boron flow to fail to 0 gpm, requiring the applicant to take action to initiate boron flow via an alternate path.</p>
<p>ENHANCEMENT</p>	<p><u>NRC:</u> Indicate "Alternate Path" on JPM cover sheet and at the point in the JPM where the alternate path initiates.</p>
	<p><u>LICENSEE RESPONSE:</u> The licensee updated the JPM to indicate where the alternate path begins.</p>

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JPM/Scenario Event Number	Comment(s)
<p>B.1.b (auto pwr pressure control)</p> <p><b>UNSAT<sub>2</sub></b></p> <p><b>ENHANCEMENT</b></p>	<p><u>NRC:</u> During validation, the examiners identified that under the initial conditions of JPM, the applicants could satisfy the Task Standard using several different procedures. As a result, the JPM was considered unsat due to the licensee's inability to establish a set repeatable actions to use to evaluate the applicants.</p> <p><u>LICENSEE RESPONSE:</u> The licensee replaced the JPM with "1A Safety Injection Pump ASME Startup (with High Motor Amps)." The new JPM was successfully validated and determined to meet the requirements of NUREG-1021.</p> <p><u>NRC:</u> Indicate "Alternate Path" on JPM cover sheet and at the point in the JPM where the alternate path initiates.</p> <p><u>LICENSEE RESPONSE:</u> The licensee updated the JPM to indicate where the alternate path begins.</p>
<p>B.1.d (cs to cold leg recirc)</p> <p><b>ENHANCEMENT</b></p>	<p><u>NRC:</u> Delete "...during the completion of Step 7" from Task Condition Number 7.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and made the change.</p>

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<p align="center">B.1.e (shutdown a dg)</p> <p align="center"><b>ENHANCEMENT</b></p>	<p><u>NRC:</u> Add the following cue after Step 9, "Another operator will complete BOP DG-11T1."</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and made the change.</p>
<p align="center">B.1.f (swap ccw pumps)</p> <p align="center"><b>UNSAT<sub>3</sub></b></p> <p align="center"><b>ENHANCEMENT</b></p>	<p><u>NRC:</u> During validation, the examiners identified that this JPM was nearly identical to an event contained in the scenario set. The JPM was considered to be unsat.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and replaced the JPM with "Align for Containment Vent Release (Failure of ESFAS Isolation Signal)." The new JPM was successfully validated and determined to meet the requirements of NUREG-1021.</p> <p><u>NRC:</u> Indicate "Alternate Path" on JPM cover sheet and at the point in the JPM where the alternate path initiates.</p> <p><u>LICENSEE RESPONSE:</u> The licensee updated the JPM to indicate where the alternate path begins.</p>

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B.2.b (startup a h2 recombiner)  ENHANCEMENT	<p><u>NRC:</u>            Modify Task Condition Number 4 to read "Unit 1 containment temperature is 220°F and pressure is 6.3 psig."</p> <p><u>LICENSEE</u> <u>RESPONSE:</u>    The licensee agreed and modified the JPM Task Conditions.</p>
B.2.c (fire detection/alarm)  ENHANCEMENT	<p><u>NRC:</u>            Indicate "Alternate Path" on JPM cover sheet and at the point in the JPM where the alternate path initiates.</p> <p><u>LICENSEE</u> <u>RESPONSE:</u>    The licensee updated the JPM to indicate where the alternate path begins.</p>

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<p style="text-align: center;">A.1.a (ro) (pdms surveillance)</p> <p style="text-align: center;">ENHANCEMENT</p>	<p><u>NRC:</u> During the performance of the JPM, the examiners noted that the applicants became confused over a note in Step F of 1BOSR 3.h.1-1. The note stated that the channel check of the PDMS channels consisted of comparing the computer point value with the applicable main control board indication. There were several computer points that did not have corresponding main control board indications (e.g., narrow range reactor coolant system cold leg temperatures, power range nuclear instrument upper and lower voltages, etc.). Although 1BOSR 3.h.1-1 contains sufficient instructions for the performance of channel checks of the PDMS system, the examiners agreed that the note of Step F was confusing. This issue was brought to the attention of Byron Training Department personnel.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed, issued a Condition Report, and will be modifying the procedure for clarity.</p>

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<p align="center">A.1.b (ro) (respond to deluge alarm)</p> <p align="center">ENHANCEMENTS</p>	<p><u>NRC:</u> Task Condition Number 2 states that "All conditions are normal" when, in fact, there is a big fire in the plant.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and modified the Task Condition.</p> <p><u>NRC:</u> The Initiating Cue directs the applicant to respond to 1PM09J (i.e., IAW BAR 1PM09J-C6). However, Step 2 of the JPM states that the applicant is expected to review (and I assume respond to) BAR 0-37-A4. This is confusing. If the applicant is to respond IAW BAR 1PM09J-C6 then delete the need to review BAR 0-37-A4.</p> <p><u>LICENSEE RESPONSE:</u> The JPM was modified to only have the applicant respond IAW BAR 1PM09J-C6.</p> <p><u>NRC:</u> Applicant should be allowed to complete BAP 1100-10 through step C.1.c.</p> <p><u>LICENSEE RESPONSE:</u> The JPM was modified to allow the applicant to complete applicable steps of BAP 1100-10.</p>

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<p>A.3 (ro) (high rad in aux building)</p> <p><b>ENHANCEMENT</b></p>	<p><u>NRC:</u> The applicant should be allowed to complete BAR RM11-4-1AR26J through Step E.5.</p> <p><u>LICENSEE RESPONSE:</u> The JPM was modified to allow the applicant to complete applicable steps of BAR RM11-4-1AR26J.</p>
<p>A.1.a (sro) (review pdms surveillance)</p> <p><b>UNSAT<sub>4</sub></b></p>	<p><u>NRC:</u> What is the safety significance of the planned errors? Without significance, I have no grounds for failing an applicant and the JPM would be considered unsat.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed that the safety significance was very low. The licensee replaced the JPM with "Review QPTR Surveillance." The new JPM was successfully validated and determined to meet the requirements of NUREG-1021.</p>
<p>A.1.b (sro) (initiate a lcoar)</p> <p><b>ENHANCEMENT</b></p>	<p><u>NRC:</u> JPM should only be "initiate" the LCO. As written, the JPM also requires the applicant to determine PMT and exit the LCO. This is two separate K/As AND repeats the task in JPM A.2 (SRO), "Determine Post Maintenance Testing Requirements" (double jeopardy).</p> <p><u>LICENSEE RESPONSE:</u> The JPM was modified to only require the applicant to "initiate" the LCO.</p>



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<p>A.3 (sro) (review gaseous release)</p> <p><b>UNSAT<sub>s</sub></b></p>	<p><u>NRC:</u> The examiners determined that the JPM had no safety significance since none of the planned errors significantly complicated/impacted the release (e.g., cause an unmonitored release, cause a release of greater volume or rad level, etc.). As a result, the JPM was considered unsat.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and modified the JPM to include at least one error that would result in an unmonitored release, if not identified by the applicant.</p>
<p>Scenario 1</p> <p>ENHANCEMENTS</p> <p>Event 2</p> <p>Event 6,7</p>	<p><u>NRC:</u> There appears to be no consequence to this event.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and modified the event to include leak in the level tree and subsequent trip of CC pump.</p> <p><u>NRC:</u> Recommend stopping the scenario once transition to ES-1.1 is made.</p> <p><u>LICENSEE RESPONSE:</u> Licensee agreed and modified the scenario.</p>

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<p style="text-align: center;">Scenario 2</p> <p style="text-align: center;">ENHANCEMENTS</p> <p style="text-align: center;">Event 7,8</p>	<p><u>NRC:</u> Recommend making the placing of loads in pullout a critical task. Missing this has caused individuals to be denied licenses in the past.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and made this action a critical task since failure to place these loads in pullout could cause the EDG to be overloaded upon return to service.</p>
<p style="text-align: center;">Scenario 3</p> <p style="text-align: center;">ENHANCEMENTS</p> <p style="text-align: center;">Events 8, 9, and 10</p>	<p><u>NRC:</u> These events place the applicants into EOP actions, for which, individual credit for competencies is difficult to evaluate. Although these events complicate recovery actions nicely, the RO/SRO/BOP would not be individually credited for their actions other than being credited for responding to a Major event.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and modified the scenario to address this.</p>

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Scenario 4  ENHANCEMENTS	
Event 8	<p><u>NRC:</u> This event does not require an operator to take substantive actions. No "component failure" credit would be given for this event.</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and modified the scenario.</p>
Event 9	<p><u>NRC:</u> Although the event causes the crew to transition into ECA 3.3, it is more of an additional "major" verses an additional "component failure."</p> <p><u>LICENSEE RESPONSE:</u> The licensee agreed and modified the scenario.</p>