

Braidwood 2016 ILE Operating Test Comments

- Simulator Scenarios

- General Scenario Comments:

- There is no low power scenario (ES-301 D.5.c, defined as criticality to 5% power). The lowest starting power level is 53%. The 2013 and 2014 exams had no low power scenarios either (lowest starting power levels were 75%).
 - RE: facility stated that they believed that a low power scenario was included in the previous exam. The examiners did not locate such a scenario in the previous exam.

- Scenario NRC-1:

- Quantitative attributes satisfactory. No other comments.
- Update booth operator cue for Event 5 to allow proper field operator cueing.

- Scenario NRC-2:

- Turnover sheets: the SM turnover sheet lists plant parameters for 99.9% power, but the US and NSO turnover sheets list parameters for 90% power. Scenario is a 90% power scenario.
 - RE: facility clarified that the sheet in question was listing parameters for the other plant unit.
- Quantitative attributes satisfactory. No other comments.

- Scenario NRC-3:

- Event 7 (Boric Acid Transfer Pump Trip) is credited on the D-1 form as being a component failure for the ATC. This failure does not count however since it lacks verifiable action by the ATC. At the time of the pump trip, boron and rods are both being used to reduce power. The operator continues by using only rods. Additionally, the common pump is not available for alignment. Based upon these considerations, there is no verifiable action with which to base giving credit for this event to the ATC. In the absence of this failure, the ATC still has a total of 2 I/C failures for this scenario. *(Note: not credited on ES-301-5 towards malfunction totals.)*
 - RE: facility will remove the reference on the D-1 form indicating that malfunction credit is being given to the ATC operator for this event.
- Scenario does not meet minimum ES-301-4 quantitative attribute for 'EOPs entered/requiring substantive actions' (target is 1-2). Scenario begins in E-0 and transitions directly to FRP-H.1. Since E-0 does not count towards this total (as it is the primary reactor scram response procedure) and E-1/2/3 are not entered, the total for this attribute is zero. Per ES-301 D.5.d these ranges are not absolute limits. The overall difficulty of the scenario appears to be adequate.
 - RE: facility acknowledged that they has misunderstood the requirements of NUREG-1021 Appendix 'D' with regard to the categorization of these events on ES-301-4.
- Updated curing for Events 4, 6 and 7 to provide simulator operator a reminder and answer to possible field operator requests.

- Scenario NRC-4:

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- Turnover sheets: the SM turnover sheet lists plant parameters for 99.9% power, but the US and NSO turnover sheets list parameters for 53% power. Scenario is a 53% power scenario.
 - RE: facility clarified that the sheet in question was listing parameters for the other plant unit.
 - Scenario only has one event before the major transient that requires AOP entry. The ES-301-4 quantitative attribute for 'Abnormal Events' is a target of 2-4. Appendix D section C.2.d allows for the inclusion of alarm response procedures in this total if 'significant and verifiable actions are required'. Event 5 is a Feedwater Regulator Valve controller valve that is addressed via a annunciator response and hard card procedures. Since this event requires significant and verifiable actions, it has been counted as an 'Abnormal Event' raising the quantitative total to two.
 - Added DNB RCS Pressure 2209 psig for contingent TS call (Event 3).
- **Quantitative Differences in Scenario Reviews:**
 - Scenario 1
 - EOPs Entered/Requiring Substantive Actions: NRC counted 1 vice Facility count of 2.
 - Scenario 2
 - Abnormal Events: NRC counted 3 vice Facility count of 4. Possibly due to facility including ARPs with significant actions.
 - EOPs Entered/Requiring Substantive Actions: NRC counted 1 vice Facility count of 2.
 - Scenario 3
 - Abnormal Events: NRC counted 3 versus Facility count of 4. Possibly due to facility including ARPs with significant actions.
 - Major Transients: NRC counted 1 versus Facility count of 2.
 - EOPs Entered/Requiring Substantive Actions: NRC counted 0 vice Facility count of 3.
 - RE: facility acknowledged that they has misunderstood the requirements of NUREG-1021 Appendix 'D' with regard to the categorization of these events on ES-301-4. Facility representative believed that the value in question had been entered in error and that the value on ES-301-4 is incorrect.
 - Scenario 4
 - Abnormal Events: NRC counted 2 vice Facility count of 4. Possibly due to facility including ARPs with significant actions.
 - NRC counted 1 versus Facility count of 2.
 - **Control Room JPMs**

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- **JPM a** (SIM-113):
 - Performance step 3 should be included as a critical task. While this step (which encompasses the actions of 1BwOA PRI-2 step 2.a) will be unsuccessful and result in execution of the RNO step, failure to perform the actions of this step would constitute incorrect procedure usage and would result in failure to progress through the JPM task. NUREG-1021 Appendix C B.3 requires that procedural steps which are required to be performed in a proper sequence to accomplish the task standard shall be identified as critical steps.
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - Updated simulator setup instruction to provide instructions to prevent distractions from miscellaneous alarms.
- **JPM b** (SIM-301):
 - No comments.
- **JPM c** (SIM-203):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
- **JPM d** (SIM-800):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - Remove the SRO-only technical specification evaluation portion of the JPM (including associated cues). This is unnecessary for a control room JPM and it is desirable to administer the exact same JPM to all RO and SRO applicants in this instance. SRO technical specification usage will be evaluated adequately elsewhere during the operating test.
- **JPM e** (SIM-409S):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - Updated JPM to use a different MSR valve pair to resolve an issue with an unwanted additional plant response.
- **JPM f** (SIM-409P):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - In performance step 1, the opening of RCP No. 1 seal leakoff isolation valve 1CV8141B prior to RCP start should be a critical step. BwOP RC-1 precaution D.7.b states that an RCP must not be started unless adequate seal leakoff flow exists. The seal leakoff path must be available (e.g. leakoff valve open) in order to preclude equipment damage. Per NUREG-1021 Appendix C B.3, steps that must be accomplished in the correct sequence and at the proper time in order to accomplish the task standard shall be identified as critical steps. For clarity, this should also be split out as a separate performance step by itself (instead of being a substep in performance step 1).

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- RE: facility representative believes that 1CV8141B will be open at the beginning of the JPM and will not require repositioning. Facility will verify and the step will be made a critical task in the event that 1CV8141B is required to be opened by the applicant.
 - Changed the SRO 301-2 sheet so the SRO's will not perform JPM f in lieu of JPM h. This was done due to time constraints on the schedule.
 - JPM g (SIM-612):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - JPM h (SIM-706):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - Changed the SRO 301-2 sheet so the SRO's will not perform JPM f in lieu of JPM h. This was done due to time constraints on the schedule.
- In-Plant JPMs
 - JPM i (IP-101):
 - Add a laser pointer to the list of materials on the JPM summary page.
 - RE: facility verified availability of laser pointers and will add a laser pointer to the list as requested.
 - Updated cue for initial meters reading zero if asked and added a wider angle picture of the cabinet with the knife-switch disconnect included in picture.
 - JPM j (IP-801):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - Performance step 3 should be included as a critical task. While this step (which encompasses the actions of 1BwOP CO-5 steps F.1.b through F.1.e) will be unsuccessful and necessitate execution of the step F.1.f, failure to perform the actions of this step would constitute incorrect procedure usage and would result in failure to progress through the JPM task. NUREG-1021 Appendix C B.3 requires that procedural steps which are required to be performed in a proper sequence to accomplish the task standard shall be identified as critical steps.
 - Performance step 5 should be included as a critical task. While this step (which encompasses the actions of 1BwOP CO-5 steps F.2.d, F.2.e, and F.2.g.1.a) will be unsuccessful and necessitate execution of the step F.1.f, failure to perform the actions of this step would constitute incorrect procedure usage and would result in failure to progress through the JPM task. NUREG-1021 Appendix C B.3 requires that procedural steps which are required to be performed in a proper sequence to accomplish the task standard shall be identified as critical steps.
 - The action of step BwOP CO-5 step F.2.g.1.a to 'close the SELECTOR EMPC' should be moved from performance step 5 to performance step 6 to align the JPM performance substeps with the structure of the actual plant procedure. Additionally, if opening the MASTER EMPC in step F.2.g.1.c prior to closing the

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SELECTOR EMPC would result in the system failing to function, then the action of step F.2.g.1.a needs to also be included as a critical portion of performance step 6. NUREG-1021 Appendix C B.3 requires that procedural steps which are required to be performed in a proper sequence to accomplish the task standard shall be identified as critical steps.

- Updated initiating cue for the room being clear, and updated step 2 to have open bullets as either step is allowed per station procedures.

- JPM k (IP-411):

- Performance step 2 should be included as a critical task. While this step (which encompasses the actions of 1BwOA PRI-5 steps 10.b) will be unsuccessful and necessitate execution of the step 10.b RNO actions, failure to perform the actions of this step would constitute incorrect procedure usage and would result in failure to progress through the JPM task. NUREG-1021 Appendix C B.3 requires that procedural steps which are required to be performed in a proper sequence to accomplish the task standard shall be identified as critical steps.
- Updated initiating cue for RSD Panel being aligned per the procedure attachment, updated cue to include positioner and demand signal cues, updated critical step to include bleeding air.

- Admin JPMs

- RO CO1 (R-113):

- The cue sheet initial conditions contain a minor typographical error; item #3 says that “a leak rate was just complete” instead of “a leak rate was just completed.”
 - RE: facility will correct typographical error as requested.
- For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
- The JPM guide contains a minor typographical error; the performance standard for performance step #1 says “determine TOTAL ELAKAGE” instead of “determine TOTAL LEAKAGE”.
 - RE: facility will correct typographical error as requested.
- It is requested that the facility include a copy of 1BwOS RF-1 ‘TABLE A’ filled out with correct answers in the key in order to simplify and expedite the review and grading process.
 - RE: facility will provide a grading key version of the data table as requested.
- Updated initial conditions to clarify leak rate info is being given for this task, a filled out procedure was added as a key for grading purposes.

- RO CO2 (R-102):

- For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.

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- It appears that this JPM could be simplified considerably by simply providing the applicant a handout containing photos of the NI drawer indicators at the desired values (in lieu of using simulator indications). This should eliminate the need for the complex cueing discussed in the notes prior to and after performance steps #4 and #6, as well as the related potential for confusion on the part of the applicant. The current arrangement of the JPM also requires the examiner to log NI data on the JPM cue sheet prior to commencing the JPM. Additionally, a handout containing the desired data from the operator aid book could also be provided instead of using the book in the simulator. This would have the added benefit providing flexibility in the administration of the exam by permitting the JPM to be completed from a location other than the simulator.
 - RE: facility will revise the JPM as requested.
- Updated JPM with pictures instead of using the prefilled attachments and reading the numbers in the simulator. Added band to key to allow for variations in reading the pictured meters.
- RO EC1 (R-204):
 - Added print grid location to the examiner NOTE to be able to quickly locate the correct location.
- RO EP1 (R-401):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - Updated examiner initial cue and examinee material to leave the time blank for the candidate or evaluator to enter the time on the form before beginning to remove time calculation error traps.
- SRO CO1 (S-108):
 - No comments.
- SRO CO2 (S-114):
 - Performance step #2 refers to the applicant referencing the note prior to BWGP 100-2 step F.23.1. This note references both BWCB-1 Figure 18 and BWGP 100-2 Attachment A, however neither of these appears to be included in the JPM materials which are to be provided to the applicant.
 - Updated cue to remove possible leading information.
- SRO EC1 (S-204):
 - For JPM performance steps, include the corresponding procedural step numbers to facilitate cross-referencing by the evaluator.
 - The initiating cue should also direct the applicant to identify any required technical specifications or TRM actions that are required if warranted by the surveillance results since this is evaluated in step #3 of the performance standard.
 - RE: facility will update the initiating cue of the JPM as requested.
 - Updated reference procedure with N/A and corrected information, updated cue to ensure findings are reported to the examiner once JPM is completed.

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- **SRO RC1** (S-301):
 - Updated cue to give examiner the corrected set point to evaluate in Step 4 and added bolded warning to examiner initial cue to **NOT** hand out second procedure until cued in the JPM.
- **SRO EC1** (S-413):
 - No comments.

NOTE: Comments in **yellow highlight** were discussed with the licensee prior to the onsite validation of exam. Comments in **green highlight** were items identified and changed as a result of the onsite validation of the exam.