Monticello Initial License Exam Outline Review Comments

1. Simulator Scenario Outline Comments

1) **NRC:** Critical Tasks, per NUREG-1021 Appendix D, must include the following elements:
   - Safety Significance
   - Initiating Cues
   - Measurable Performance Standards
   - Performance Feedback

   These elements need to be described in the scenario guide with their bases. While the submitted outline very briefly mentions anticipated critical tasks (CTs), further detail will be needed to demonstrate that required elements are met for all CTs.

   Facility: Monticello maintains a Critical Task Evaluation Guide that includes detailed descriptions of the elements bulleted above. These will be included in the scenario guides as requested.

2) **NRC:** Ensure that all Technical Specifications (TS) credited in the scenario guide are required to be entered, and include all LCOs, Actions and Functions that the event requires. While referring to TS will be noted, appropriate grading will be performed on those TS that were properly (or improperly) entered.

   Facility: All scenarios include two TS evaluations by the CRS that require entry into an LCO or TLCO required actions.

3) **NRC:** No "low power" scenario was included, per ES-301 D.5.c. (2018 Scen. 2 was a "lower-power" scenario at 17%)

   Facility: When creating scenarios at low power, a lack of core power history and equipment in service limit the number of feasible and measurable events for the examination. The approved Monticello ILT NRC Exams in 2010, 2013, 2015 and 2016 were all low power startup/shutdown scenarios that started between 35-45%. In order to prevent duplication from the 2018 17% scenario, Monticello is using a low power startup scenario from approximately 41%.

Monticello Initial License Exam Outline Review Comments

4) **NRC:** Please address the following for Scenario 1:
   - Which specific rods have slow scram times?
   - "Bean" issue - The BOP diagnoses the failure and attempts to close the SRV for Event 5, and the ATC only scrams the reactor.

Facility:

- Control Rods 10-11 and 10-43 (peripheral and non-adjacent) have slow scram times as described in the scenario guide.
- The BOP will not be successful in taking the actions to close the SRV the second time. The OATC will receive the C-05 "SRV OPEN" alarm and evaluate steam line flows on the C-05 panel to determine that the SRV has reopened. This will require the OATC to insert a manual scram prior to torus temperature reaching 110°F. This is a critical task and the third OATC I/C for the scenario.

5) **NRC:** Please address the following for Scenario 2:
   - Which specific rods have slow scram times?
   - "Bean" issue - The BOP diagnoses the failure and identifies degrading vacuum (i.e. the need to scram) for Event 5, and the ATC only scrams the reactor.

Facility:

- Control Rods 10-11 and 10-43 (peripheral and non-adjacent) have slow scram times as described in the scenario guide.
- The BOP will likely recognize and/or announce the loss of the CW pumps; however, no action from the BOP will mitigate the event. The OATC will receive a low condenser vacuum alarm on C-05 and coordinate with the CRS to insert a manual scram prior to receiving the automatic scram. This is allowed as an OATC bean as described in the NRC comments below for scenario 4.
- Facility correction to Scenario 2 D.1: Event 2 was used on the previous 2 NRC Exams (2016 NRC Scenario 2). The NP2 coding removed from Scenario 2 Event 2.

6) **NRC:** Please address the following for Scenario 3:
   - Verify the rods that will experience drift in Event 5 are not rods that will be inserted during Event 3.

Facility: Peripheral control rods 46-35 and 50-31 will both drift in for Event 5. These are NOT rods that will be inserted for the Event 3 rapid power reduction.

7) **NRC:** Please address the following for Scenario 4:
   - Which specific rods have slow scram times?
   - For Event 5, is it anticipated that the crew remains in the acceptable region of the P-F map using a rapid downpower on recirc flow only? At what power level will vacuum stabilize?
   - Consider splitting Event 6 into 3 events: 1) condenser vacuum further degrading requiring a reactor scram (ATC credit for scram), 2) Fuel failure and RWCU suction line break, and 3) G3 failure (see comment below for BOP credit).
   - Why is manually closing G3 isolation valves not a BOP component event?

Facility:

- Control Rods 10-11 and 10-43 (peripheral and non-adjacent) have slow scram times as described in the scenario guide.
- It is anticipated that the crew will remain in the acceptable region of the P-F map with a reactor power approximately 85-95% depending on the power reduction ordered by the CRS. The condenser air in leakage malfunction will delete when the OATC reduces recirc flow.
- Facility correction to Scenario 4 D.1 for Event 5: This is only a reactivity manipulation bean for the OATC, not a component malfunction.
- Condenser vacuum further degrading has been removed from this scenario to prevent malfunction similarities with Scenario 2 Event 5.
- New Event 6 created: Complete loss of Stator Water Cooling requiring a reactor scram.
- Event 7 is Fuel Failure with RWCU break that requires an ED.
- The G3 failure cannot be counted as a BOP bean because the G3 will not isolate manually either. No measurable mitigating action.
- Event 8 changed: Only 2 of the 3 ADS valves will fail to open. This allows some measurable success for the BOP when initiating the ED and 2 of 3 ADS valves failing still meets the safety significance of critical task (CT-ADS).

8) **NRC:** Please address the following for Scenario 5:
   - Which specific rods have slow scram times?
   - Consider the wording for CT-10 and Event 6. The CT references torus rupture while Event 6 references an unisolable torus leak.

Facility:

- Scenario 5 D.1 typo: No control rods are slow for scenario 5. However, the OPRMs are Inoperable.
- Wording changed so both are Torus “rupture”.

2. Potential Op Test Duplication/Overlap Concerns with Cert Exam – TBD

3. JPM Outline Comments

Monticello Initial License Exam Outline Review Comments

1) **NRC:** In-Plant System JPM 'k' refers to K/A 223001, Primary Containment System and Auxiliaries, which was associated with Safety Function 5: Containment Integrity per the K/A manual. In contrast, the JPM was associated with Safety Function 9: Radioactivity Release per Forms ES-301-1 and ES-301-2. Explain why Safety Function 9 was chosen as the Safety Function for this JPM and why Safety Function 5 was not considered to be the best fit.

Facility: Facility agrees JPM K should be associated with Safety Function 5.

2) **NRC:** Consider significantly modifying or replacing the following JPMs due to repeated usage:
   - Admin RO - **JPM-4 AWI-04.04.02-005**
   - Admin SRO - **JPM-OWI-01.08-002**
   - Simulator – **JPM A**

Facility: These three JPMs were randomly selected from the previous two NRC exams. This is allowed IAW NUREG 1021 ES-301 D.2.a Page 9 of 33.

9) **NRC:** Please answer the following questions:
   - Is **JPM-ODCM-03.01-002** "new" or a modified version of the JPM given on the 2018 exam?
   - What makes **JPM G** a "Low-Power/Shutdown" JPM?

Facility:

- **This JPM differs from the 2018 version in that different instruments are not functional and different mitigating actions are required to be taken. Whether classified as New or Modified the requirements of Form ES-301-1 are still met.**
- **JPM G is a task that would be performed after a LONOP from multiple transformer malfunctions. The plant will be post scram in Mode 3 for this JPM.**

4. Written Exam Outline/Audit Exam Outline

a. **NRC: TBD** – Audit Exam outline K/As will require comparison with those used for the NRC exam in order to check for duplication/overlap when this is developed and approved.

Facility: A complete version of the 2020 ILT Audit Exam will be provided to the NRC upon completion. Monticello will certify, as part of the examination submittal, that there is no question duplication between the Audit and NRC exams IAW NUREG 1021 ES-401 C.1.g Page 2 of 52.