

# Clinton 2018 Initial License Exam Outline Review Comments

## Simulator Scenario Outline Comments

- General Comments

- **NRC:** During Scenario #2 Event #6, what verifiable action will the ATC be expected to perform?

**Facility:** The ATC will be required to perform actions to secure the 'A' Turbine Driven Reactor Feed Pump (TDRFP).

NRC comment sufficiently addressed.

- **NRC:** There is no low power scenario (defined as criticality to 5% power). The lowest initial condition is a power ascension that commences from 10% power. (This comment is for information only; a low power scenario is desirable but not mandatory per ES-301)

**Facility:** In previous CPS ILT exams, CEs have provided feedback that performing a startup during a scenario is not desirable, and that performing scenarios at low power (10 - 22%) are acceptable. We also provide lower power scenarios for the audit exam.

NRC comment information only.

- Potential Duplication/Overlap Concerns (additional details from facility and NRC review needed to determine acceptability):

- **NRC:** 2018 NRC Exam scenario #2 and 2015 NRC Exam scenario #2 both have major transients involving an ED based upon high containment pressure.

**Facility:** Per NUREG 1021 App. D – C.1.f, if any major event is repeated from either of the previous 2 NRC initial licensing operating tests, the exam author should change the major event, the ICs, or subsequent malfunctions to alter the course of action for the given scenario. The 2018 NRC Exam S-2 and 2015 NRC Exam S-2 meets these criteria as follows: 1) the major transients and after major malfunctions are different – the 2015 exam was a MSL rupture / ATWS event with a failure of the Div 1 CS manual initiation logic. The 2018 NRC Exam Scenario is a lower RPV plenum leak in which 3 SRVs fail to open. Although both scenarios require an ED based on high containment pressure, the mitigating actions are different in each.

NRC comment sufficiently addressed.

- **NRC:** 2018 NRC Exam scenario #3 and Audit Exam scenario #2 both have EDs based upon max safe temperatures in secondary containment.

**Facility:** Per NUREG 1021 ES-301 D.1.a – simulator events and JPMs that are similar to those that were tested on the audit examination are permitted provided that the actions required to mitigate the transient or complete the task are significantly different from those required during the audit examination. The 2018 NRC Exam S-3 and 2018 Audit Exam S-2 meets this criteria as follows: 1) the leak locations are different (instrument reference line leak vs. RCIC steam supply line).

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The audit exam leak is unisolable; the NRC exam leak is isolable (although leak isolation will fail. The blowdown temperatures are different (140 for the audit exam vs. 200 for the NRC exam. The after major component failures are also different – the VG system fails to initiate on the audit exam and the MDRFP trips on the NRC exam.

NRC comment sufficiently addressed.

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[Redacted]

[Redacted]

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- o **NRC:** 2018 NRC Exam scenario #4 and Audit Exam scenario #1 both have a LOCA with an ED based upon low level as their major transients. Additionally, 2017 NRC Exam #1 also has a major transient involving a LOCA with an ED due to low level

**Facility:** The mitigating actions for 2018 NRC Exam scenario #4 and Audit Exam S-1 differ in that the available injection systems are different in both. For NRC Exam S-4, FW/CD/CB and CRD systems are available for injection, whereas in Audit exam S-1 they are not due to the loss of the RAT which causes a complete loss of non-vital station power. In addition, the after major component failures affect different systems which impacts level recovery actions. The 2017 NRC Exam S-1 differs from the 2018 S-2 in the same way (different injection systems in both).

NRC comment sufficiently addressed. During a phone call on 4/11/2019, the Licensee confirmed that Audit S-1 and 2017 NRC Exam S-1 have the same major and after major component malfunction; that Clinton reused the 2017 S-1 major event on the 2018 Audit. It is permissible to use events from the previous two NRC exams on the Audit.

- Technical Specification Event Concerns (additional details from facility and NRC review needed to determine acceptability):

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- **NRC:** 2018 NRC Exam scenario #1 uses TS 3.8.1 for two separate TS call opportunities; this will require additional review upon exam submittal to ensure that an adequate opportunity to evaluate this competency will be provided. Applying TS 3.8.1 twice in this manner in a single scenario may not be sufficiently varied to allow for the complete evaluation of two discrete TS call opportunity event

**Facility:** The required actions for both TS 3.8.1 entries are different. Event-4 requires entry into Improved Technical Specification (ITS) 3.8.1 Condition B, while Event-6 requires entry into 3.8.1 Condition A (and possibly D depending on how whether the SRO declares Div 1 DG operable after fuel oil day tank level is restored in E-4). The ITS entries require review of different sections of the ITS bases to determine required actions. Event-6 LCO entry is a different challenge in that ITS permits operation without the ERAT SVC in service (the ITS entry is required by the Alarm Response Procedure).

NRC comment sufficiently addressed.

- **NRC:** 2018 NRC Exam scenarios #3 and #5 both use TS 3.1.3.C for TS call opportunities; this will require additional review to ensure that these events are sufficiently different to avoid essentially repeating the same event between multiple scenarios. Additionally, Audit scenario #3 also uses TS 3.1.3.C for a TS call opportunity.

**Facility:** S-5 uses a surrogate in the SRO position – no ITS evaluation will be required. 2018 NRC Exam S-3 event 5 will be designated as a TS-SRO Event (requires entry into Single Loop Operations and ITS 3.4.1 C.1). This currently overlaps with 2018 Audit Exam S-6 which will be removed from the audit exam.

During a phone call on 4/11/2019, the CE stated that it would be acceptable to retain both the outward rod drift event (#3) in NRC Exam S-3, and the uncoupled rod event (#4) in NRC Exam S-5 (making the Licensee's surrogate comment no longer applicable), on the basis that these two events are sufficiently different, even though the TS entry is the same for both (note that the TS actions of 3.1.3 C will be entered and then exited for the uncoupled rod, since operator actions to recouple the rod will be successful). The CE also stated that the inward rod drift event (#6) on Audit S-3 would need to be replaced, because the inward and outward rod drift events were not discriminating, i.e., (1) only a difference in direction; in both cases, CPS 4007.02 will be entered for Inadvertent Rod Movement, and (2) the TS entry and associated actions to fully insert the inoperable rod and disarm the CRD are the same for both events. Replacement of the inward rod drift event on Audit S-3 confirmed on 4/24/2018.

The CE stated that the Licensee's proposal to specify Single Loop Operations (SLO) TS 3.4.1.C.1 as the credited SRO TS call in NRC Exam S-3, Event 5, in lieu of TS 3.1.3.C for the outward rod drift in Event 3, would not preclude the evaluation of TS 3.1.3.C for the outward rod drift in Event #3, and that both TSs should be specified on the D-1 for NRC Exam S-3. Inclusion of appropriate TS information on the D-1 for NRC Exam S-3 confirmed on 6/11/2018.

The Licensee stated that 2018 Audit Exam S-6 would be removed from the 2018 Audit Exam to preclude overlap concerns with NRC Exam S-3 on the basis of RR

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Pump failure events that result in SLOs in both scenarios. Removal of Audit Exam S-6 from the 2018 Audit Exam confirmed on 4/24/2018.

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

- **NRC:** 2018 NRC Exam scenario #5 and Audit scenario #3 both use TS 3.1.5.A for TS call opportunities.

**Facility:** NRC S-5 and Audit S-3 are different in that the initiating conditions are different (single scram accumulator low pressure vs. multiple scram accumulator low pressure alarms due to loss of CRD charging water pressure) and require different actions (3.1.5.A for the NRC S-5 vs. 3.1.5A, B, and D for the Audit exam). In NRC S-5, 3.1.5 will be exited once the scram accumulator is restored. In Audit S-3, 3.1.5 will require the reactor to be scrammed.

NRC comment sufficiently addressed.

- **NRC:** 2018 NRC Exam scenario #4 and Audit scenario #6 both use TS 3.5.1.B for TS call opportunities.

**Facility:** NRC Exam S-4 requires entry into 3.5.1.B due to loss of fill and vent. Audit S-6 requires entry into 3.5.1.B due to a loss of suction flow path, and also requires entry into 3.6.1.3 for an inoperable containment isolation valve (1E22-F015).

NRC comment sufficiently addressed.

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- **NRC:** 2018 NRC Exam scenario #1 and Audit scenario #7 both use TS 3.8.1.B for TS call opportunities.

**Facility:** Both scenarios involve different divisions (Div 1 for NRC Exam S-1 and Div 3 for Audit S-7. Audit S-7 also allows entry into ITS 3.5.1 as an alternate to 3.8.1.

During a phone call on 4/11/2018, the CE stated that it would be acceptable to retain Event #4 from NRC Exam S-1 and Event #2 from Audit Exam S-7 on the basis that HPCS TS 3.5.1.B is an alternative to TS 3.8.1.B and would therefore be appropriate as well. While TS 3.5.1.B is used in 2018 NRC Exam S-4 as noted in the preceding NRC comment, the initiating conditions are different.

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## JPM Outline Comments

- General Comments
  - **NRC:** An excessive number of RO Admin JPMs are reused from the 2015 examination. Limitations on the reuse of these JPMs from the 2017 and 2015 examinations restrict the allowable number to 1 JPM (according to the criteria of ES-301-1). While the explanatory memo provided by the facility indicates that only one such JPM would be reused, there appear to be a three:
    - RO Admin Conduct of Operations JPM #1
    - RO Admin Conduct of Operations JPM #2,
    - RO Admin Radiation Control JPM

**Facility:** The facility will replace RO Admin Conduct of Ops JPM #2 and Radiation Control JPMs, and designate RO Admin Conduct of Ops JPM #1 as previous.

NRC comment sufficiently addressed. Licensee replaced RO Admin Conduct of Operations JPM #2, "Perform Offsite Power Source Verification," (JPM 441), with Bank JPM 402 which is associated with the evaluation of power distribution limits. K/A is 2.1.19 and is also used in Q #57 (Tier 1/Group 1) of the Written Exam. CE confirmed no overlap with the Written Exam, as Q #57 is associated with the E/APE for Partial or Total Loss of DC Power.

Licensee replaced RO Radiation Control JPM, "Use CPS RP On-line to determine Radiological Requirements," (JPM 532), with a new JPM. K/A is 2.3.13, which is also used in Q # 71 (Tier 3) of the Written Exam. CE confirmed no overlap between the new JPM and Tier 3 Q #71.

- **NRC:** While the "previous 2 exams" for the purposes of the remaining JPMs (SRO admin JPMs and systems JPMs) consist of the 2017 exam and 2015 SRO retake exam #2015302, it was still noted that a significant number of JPMs were drawn from 2015 exam (a potential concern for predictability):
  - SRO Admin Radiation Control JPM
  - SRO Admin Emergency Plan JPM
  - System JPM 'c'
  - System JPM 'd'
  - System JPM 'e'
  - System JPM 'g'

**Facility:** NUREG 1021 ES-301 provides guidelines for minimizing predictability and to maintain test integrity by providing limits on JPM bank use and repeated from the last two NRC exams. The facility contends that we are within those limits, eliminating the predictability of the exam. In addition, JPMs used on previous NRC exams are placed in an open exam bank which are available to the examinees. Bank JPMs are all available to be placed on the exam up to the limits contained in ES-301-1 and ES-301-2.

NRC comment sufficiently addressed. Discussed this item with Chris Cowdrey of the NRR Program Office during the week of April 2, 2018. Chris provided feedback

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that the Licensee's use of JPMs from the 2015 NRC Exam, as identified above (given that the 2015 SRO JPM Retake Exam was counted as "previous 2 exam" component), did not circumvent the guidance provided in NUREG-1021, ES-301. The Licensee's use of identified Admin replacements JPMs is in compliance with the metrics specified in ES-301-1 and ES-301-2.

- **NRC:** The RO Admin Radiation Control JPM appears to have been on the last two exams as well. This may be a predictability concern.

**Facility:** The facility will replace RO Admin Control JPM.

NRC comment sufficiently addressed. This action resolves any predictability concern associated with the previous use of JPM 532.

- Potential Duplication/Overlap Concerns (additional details from facility and NRC review needed to determine acceptability)

- **NRC:** Systems JPM 'i' appears to be similar to Audit exam systems JPM 'i'.

**Facility:** The two JPMs are different in that NRC JPM i. operations are performed in the plant on the component switchgear controls, whereas the Audit JPM i. is performed at the Remote Shutdown Panel in the simulator (considered an In-plant JPM because the RSP is located in the plant. There is no Div 2 RSP panel at CPS.

NRC comment sufficiently addressed.

- **NRC:** The SRO Admin Conduct of Operations JPM #2 appears to be a similar task to the corresponding JPM on the audit exam and also has an identical K/A (2.1.5).

**Facility:** The NRC JPM covers Equipment Operator staffing and absence requirements (must be filled within 2 hours). The audit exam JPM covers SRO staffing and tests work hour rule limits.

NRC comment sufficiently addressed.

- **NRC:** Systems JPM 'c' appears similar to the corresponding JPM on the 2015 retake NRC exam (it is not marked as "previous 2 exams"). Also, this JPM appears to be similar to Audit systems JPM 'd'. Furthermore these similar looking tasks are assigned to different Safety Functions between the NRC and Audit exams, however it is not clear why this is the case.

**Facility:** The Retake and NRC exams operate different controls. The retake exam tests the Turbine Electrical Trip Test Circuitry, where the NRC exam performs stroke testing of the Main Turbine Control Valves. JPM415 on the Audit exam is an alternate path version of the retake exam JPM. The Turbine Control Valves at CPS are an integral part of the Reactor Pressure Control system, and thus meets KA Safety Function 3. Audit Exam JPM 'd' meets 245000 Main Turbine Generator and Auxiliary Systems A3.01 because it tests Main Turbine Trip Circuitry. The audit exam JPM also meets 241000 A4.19 because it tests the ability to operate turbine panel controls.

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NRC comments sufficiently addressed. Overlap concern and Safety Function Question resolved.

### Overall Operating Exam Concerns

- **NRC**: RO Admin JPM COOP #2 appears to overlap with Scenario #1 event #4; both of these appear to involve conducting the actions of TS 3.8.1.B for offsite power checks.

**Facility**: RO Admin JPM COOP #2 is being replaced.

NRC comment sufficiently addressed. Licensee replaced RO Admin Conduct of Operations JPM #2, "Perform Offsite Power Source Verification," (JPM 441), with Bank JPM 402 which is associated with the evaluation of power distribution limits. K/A is 2.1.19 and is also used in Q #57 (Tier 1/Group 1) of the Written Exam. CE confirmed no overlap concern with the Written Exam, as Q #57 is associated with the E/APE for Partial or Total Loss of DC Power.

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## Written Exam Outline/Audit Exam Outline

- **NRC:** Due to the following K/As being duplicated between the written exam outlines for the NRC and Audit exams, the Audit exam questions written for the following outline K/As will require comparison with those written for the NRC exam in order to check for duplication/overlap:
  - 295019 A2.01 (NRC exam question #51, Audit exam question #51)
  - 295031 K1.01 (NRC exam question #40, Audit exam question #40)
  - 600000 A1.08 (NRC exam question #49, Audit exam question #49)
  - 211000 K5.03 (NRC exam question #18, Audit exam question #10)
  - 295019 A2.02 (NRC exam question #76, Audit exam question #76)
  - Tier 3 Generic 2.1.42 (NRC exam question #67, Audit exam question #98)
  - Tier 3 Generic 2.2.01 (NRC exam question #68, Audit exam question #95)
  - Tier 3 Generic 2.2.06 (NRC exam question #69, Audit exam question #100)
  - Tier 3 Generic 2.3.05 (NRC exam question #70, Audit exam question #70)

**Facility:** Document provided that compares the NRC and Audit Exam questions identified above.

NRC comments sufficiently addressed and communicated to the Licensee during a phone call on 4/12/2018. CE evaluated the comparison document for duplication/overlap between the NRC and Audit Exam questions listed, with the following results:

295019 A2.01 (NRC exam question #51, Audit exam question #51) – Overlap concern sufficiently resolved.

295031 K1.01 (NRC exam question #40, Audit exam question #40) – Overlap concern sufficiently resolved.

600000 A1.08 (NRC exam question #49, Audit exam question #49) – Overlap concern sufficiently resolved.

211000 K5.03 (NRC exam question #18, Audit exam question #10) – Overlap concern sufficiently resolved.

295019 A2.02 (NRC exam question #76, Audit exam question #76) – Overlap concern sufficiently resolved.

Tier 3 Generic 2.1.42 (NRC exam question #67, Audit exam question #98) – Overlap concern sufficiently resolved.

Tier 3 Generic 2.2.01 (NRC exam question #68, Audit exam question #95) – Overlap concern sufficiently resolved.

Tier 3 Generic 2.2.06 (NRC exam question #69, Audit exam question #100) - Overlap concern sufficiently resolved.

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Tier 3 Generic 2.3.05 (NRC exam question #70, Audit exam question #70) - Overlap concern sufficiently resolved.