Facility: PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 and 2   **Exam Date: September 10 – 21, 2018**

Admin JPMs	1 ADMIN Topic and K/A	2 LOD (1-5)	3 Attributes							4 Job Content		5 U/E/S	6 Explanation
			I/C Focus	Cues	Critical Steps	Scope (N/B)	Overlap	Perf. Std.	Key	Minutia	Job Link		
SRO-A1 ADMIN-19 Evaluate System Operating Conditions When Security Analysis is Out of Service	COO1 ~~2.2.22(4.7)~~ 2.1.25(4.2)	B 3										S	NRC: (15 min) JPM is SRO-Only and is Direct from the Bank. *{Also need to update K/A reference on the ES 301-1}* Response: K/A Corrected. JPM is SAT as written.
SRO-A2 ADMIN-88 Assess Shift Staffing Levels	COO2 2.1.5(3.9)	B 2										S	NRC: (09 min) JPM is SRO-Only and is Direct from the Bank. *{Need to review a copy of SWI-02 to confirm that the last 2 performance steps are both Critical.}* Response: Last two steps are both critical. JPM is SAT as written.
SRO-A3 ADMIN-96 Perform Shutdown Safety Assessment	EC 2.2.18(3.9)	M 3										S	NRC: (10 min) JPM is SRO-Only and Modified from the Bank. *{Need to see how this is modified from the bank JPM.}* Response: JPM has been significantly modified. JPM is SAT as written.
SRO-A4 ADMIN-22 Authorize Waste Gas Release	RC 071 ~~A4.26(3.9)~~ 2.3.6(4.3)	B, P 2	X									E	NRC: (10 min) JPM is SRO-Only, is Direct from the Bank, and Previously used from the last 2 NRC Exams (2016). *{Initiating Cue should state that C21.3-10.8 has been completed through step 7.10.}* *{Also need to update K/A reference on the ES 301-1}* Response: K/A Corrected. JPM is now SAT.
SRO-A5 ADMIN-106 Review Emergency Notification Report	EP ~~2.4.44(4.6)~~ 2.4.40(4.5)	N 3	~~X~~			~~N~~		~~X~~	~~X~~			~~U~~ S	NRC: (15 min) JPM is SRO-Only, satisfies the New/Mod JPM requirement. *{Also need to update K/A reference on the ES 301-1 and correct the JPM cover page}* How is this different from the 2016 ILE JPM? The Initial Conditions given are not sufficient to determine the time required for completing the task. Therefore, validation time is not accurate and may be incorrect. Although the JPM tasking is very Narrow and not specifically Time Critical, the evolution it supports is Time Critical (15 minutes). Response: K/A Corrected. Clarified Stem Initial Conditions and the JPM is annotated as Time Critical. JPM is now SAT.

RO-A1 ADMIN-48 RCS/Steam Generator Temperature Verification	COO1 ~~002~~ ~~K5.11(4.0)~~ 2.1.20(4.6)	B ~~1~~ 2				X	~~N~~						U S	NRC: (08 min) This JPM is Direct from the Bank. *{Also need to update K/A reference on the ES 301-1}* The applicant is simply required to subtract 2 numbers (which are provided as cues) and state whether the temperature requirement for starting an RCP is satisfied. (The limit is also provided to the applicant directly in the procedure step.) Was this the same as the Modified 2016 ILE JPM? Why would the first performance step be Critical if this information is provided in the Cue? This JPM may be too Narrowly focused to be discriminating. Response: K/A Corrected. Modified the provided data information to allow calculating an incorrect answer if a math error occurs. JPM is now SAT.
RO-A2 ADMIN-78 Turbine Start Up and Load Time	COO2 2.1.25(3.9)	B, P 3						X					E	NRC: (13 min) This JPM is Direct from the Bank and Previously used from the last 2 NRC Exams (2016). Also, what determines the error bands? An applicant is expected to be able to read a graph to within ½ a minor division, therefore the tolerance on the answers to the Critical Steps should be based on an initial total band of 2½ minutes, and the answer bands adjusted accordingly. Response: Agreed - Error bands adjusted. JPM is now SAT.
RO-A3 ADMIN-100 Perform RCS Leakage Investigation (PRT)	EC 2.2.12(3.7)	B ~~1~~ 2					~~N~~						U S	NRC: (07 min) This JPM is Direct from the Bank. Why is the applicant provided both the final reading of PRT level and the time of completion that the reading was taken as Cues? Procedure, as marked up, states the reading was taken 2 hours after the initial reading? The applicant is simply required to subtract 2 numbers (which are provided as cues) and divide by the elapsed time (which is also provided in the cue) to determine the leak rate. This JPM may be too Narrowly focused to be discriminating. Response: Initial data provided was modified so that the applicant will need to calculate required values for completing SP. JPM is now SAT.
RO-A4	EP ~~035~~	M						X					E	NRC: (15 min) This JPM satisfies the New/Mod JPM requirement. [Modified from 2016 NRC ILE]

ADMIN-29 Determine Steam Generator Leakage Correlation to R-15 Counts	~~A4.08(4.1)~~ 2.4.11(4.0)	2													*{Need to correct initiating cue on page 2.}* *{Also need to update K/A reference on the ES 301-1}* Also, what determines the error bands? These are simply mathematical operations using data given in the cue. The applicant may truncate or round the answers, but a 10 GPD band on the correct answer is not applicable. (118 – 120 GPD/hr is reasonable.) **Why is the second performance step on page 4 included, and why is the third performance step not Critical?** Response: K/A, error band, and Cue Corrected. JPM is now SAT.
Simulator/In-Plant JPMs	1 Safety Function and K/A														
S-A (Free Sample) VC-29SF Malfunction of AUTO Makeup During Boration	1 004 A4.12 (3.8/3.3)	A, N 2													S	NRC: (10 min) This JPM is New, and is also ALT PATH. The initiating cue is to borate 10 gallons to the RCS, and the component failure requires securing the boration by an alternate means. Does an over-boration event occur? Is the ALT PATH the stopping of the boration by an alternate means? *{Need to have some alternate actions to accomplish tasking.}* Response: Recognizing the unintended boration and securing it by some method are the critical steps in this JPM. JPM is SAT as written..
S-B VC-104S Return 13 Charging Pump to Standby	2 ~~004~~ 011 A4.0~~8~~1 (3.5/3.2)	N 3													S	NRC: (08 min) This JPM is New. Each of the Simulator JPM must test a different safety function, but each JPM must also test different systems. (ES-301-D.4.a) This is the 2nd CVCS system simulator JPM. Response: Corrected K/A given. JPM is SAT as written.
S-C RC-24SF Align for hot leg injection	4P 003 A4.08 (3.2/2.9)	A, P 2													S	NRC: (14 min) This JPM is ALT PATH and Previously used from the last 2 NRC Exams. JPM is SAT as written.
S-D AF-21SF Stop TDAFW Pump w/ Accumulator Failure	4S 061 K4.01 (4.1/4.2)	A, N, EN, L 3													S	NRC: (07 min) This JPM is New, is ALT PATH, satisfies the engineered safety feature requirement, and satisfies the Low-Power/Shutdown requirement. JPM is SAT as written.

S-E ZC-1SF Alternate CFCUs w/ CFCU High Temperature	5 022 A4.01 (3.6/3.6)	A, D, EN 3												S	NRC: (07 min) This JPM is Direct from the Bank, is ALT PATH, and also satisfies the engineered safety feature requirement. How is this different from the **2016 ILE JPM?** *{Need to Add an 'S' to the 'Type Code' on ES-301-2.}* Response: Different section of SP. 301-2 Corrected. JPM is SAT as written.
S-F EG-20S Manual Start D5 from the Control Room	6 064 A3.06 (3.3/3.4)	N, EN 3												E	NRC: (10 min) This JPM is New(?), and also satisfies the engineered safety feature requirement. *{Need to correct typo in the Initiating Cue (Step 6.1.1 Q vs. 5.1.1 Q) and in the final two performance steps on page 4 & 5 (6.1.1 P & Q vs. 5.1.1 P &Q.}* Response: Agreed - Corrected. JPM is now SAT.
S-G (Not SRO-I) RM-5S PRM/Secure R11/12 in Control Room	7 073 A4.02 (3.7/3.7)	P 3												S	NRC: (08 min) This JPM is Previously used from the last 2 NRC Exams (2016). JPM is SAT as written.
S-H (Free Sample) FP-8S Fire Alarm Monthly Test	8 086 2.2.12 (3.7/4.1)	N ~~1~~ 2			N									E S	NRC: (05 min) This JPM is New. This JPM may be too Narrowly focused to be discriminating. Response: JPM Initial Conditions were modified to state that a fire had occurred (location specified) and that the operator was to respond to the fire alarm Annunciator. Now also include resetting the Fire Alarm panel to allow subsequent alarms to be received. JPM is now SAT.
IP-I RC-8 RCP Seal Isolation after Loss of All AC	2 ~~APE 067~~ 028 ~~AA2.67~~ AA1.03 ~~(2.9/3.1)~~ (2.9/2.9)	D, E, L, R 2												S	NRC: (04 min) This JPM is Direct form the Bank, satisfies the Emergency or Abnormal in-plant requirement, satisfies the requirement to perform actions within the RCA, and also satisfies the Low-Power/Shutdown requirement. *{Which K/A supports this JPM for Safety Function 2? (Only 0022 & 0028 for APE/EPE)}* *{Why not include step 8.a as part of the local actions? Where is MV-32166 located?}* Response: MV-23166 is located inside containment. K/A Corrected. JPM is SAT as written.
IP-J AF-16F-1 Local Operation of 22 TDAFW Pump	4S 061 A2.04 (3.4/3.8)	A, D, EN 3												S	NRC: (12 min) This JPM is Direct from the Bank, is ALT PATH, and satisfies the engineered safety feature requirement. JPM is SAT as written.
IP-K DC-1 Startup Portable Battery Charger	6 APE 058 AA1.03 (3.1/3.3)	D 3												S	NRC: (11 min) This JPM is Direct from the Bank. JPM is SAT as written.

Instructions for Completing This Table:

Check or mark any item(s) requiring a comment and explain the issue in the space provided using the guide below.

1. Check each JPM for appropriate administrative topic requirements (COO, EC, Rad, and EP) or safety function requirements and corresponding K/A. Mark in column 1. (ES-301, D.3 and D.4)

2. Determine the level of difficulty (LOD) using an established 1–5 rating scale. Levels 1 and 5 represent an inappropriate (low or high) discriminatory level for the license that is being tested. Mark in column 2 (Appendix D, C.1.f)

3. In column 3, "Attributes," check the appropriate box when an attribute is **not met**:
   - The initial conditions and/or initiating cue is clear to ensure the operator understands the task and how to begin. (Appendix C, B.4)
   - The JPM contains appropriate cues that clearly indicate when they should be provided to the examinee. Cues are objective and not leading. (Appendix C, D.1)
   - All critical steps (elements) are properly identified.
   - The scope of the task is not too narrow (N) or too broad (B).
   - Excessive overlap does not occur with other parts of the operating test or written examination. (ES-301, D.1.a, and ES-301, D.2.a)
   - The task performance standard clearly describes the expected outcome (i.e., end state). Each performance step identifies a standard for successful completion of the step.
   - A valid marked up key was provided (e.g., graph interpretation, initialed steps for handouts).

4. For column 4, "Job Content," check the appropriate box if the job content flaw **does not meet** the following elements:
   - Topics are linked to the job content (e.g., not a disguised task, task required in real job).
   - The JPM has meaningful performance requirements that will provide a legitimate basis for evaluating the applicant's understanding and ability to safely operate the plant. (ES-301, D.2.c)

5. Based on the reviewer's judgment, is the JPM as written (U)nacceptable (requiring repair or replacement), in need of (E)nhancement, or (S)atisfactory? Mark the answer in column 5.

6. In column 6, provide a brief description of any (U)nacceptable or (E)nhancement rating from column 5.

Save initial review comments and detail subsequent comment resolution so that each exam-bound JPM is marked by a (S)atisfactory resolution on this form.

Facility: PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 and 2   Scenario: 1 (Rx Pwr 100%)   Exam Date: September 10 – 21, 2018

1 Event	2 Realism/ Cred.	3 Required Actions	4 Verifiable actions	5 LOD	6 TS	7 CTs	8 Scenario Overlap	9 U/E/S	10 Explanation
1-Transfer Bus 15 from CT11 to 1RY N-BOP, SRO								S	
2-Letdown HX High Temp C-ATC, BOP, & SRO								S	
3-11 CFCU in LOCAL C-BOP, SRO & TS-SRO					X			S	Similar Event (1PT-485 fails Low) during 2016 ILE Scenario 2.
4-RCS T$_{AVG}$ Fails High I-ATC, SRO & TS-SRO					X		X	S	Must include an observable change in Rx Power from Reactivity change.
5-11 MFP Stator High Temp, Rapid Load Reduction R-ATC, N-SRO						X		S	
6-Loss of Feed/AUTO Rx Trip Failure C-ATC, SRO								S	
7-Loss of Heat Sink M-ALL						X		S	
7 Events	**0**	**0**	**0**	**-**	**2**	**2**	**6**	**S**	

Facility: PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 and 2   Scenario: 2 (Rx Pwr 90%)   Exam Date: September 10 – 21, 2018

1 Event	2 Realism/ Cred.	3 Required Actions	4 Verifiable actions	5 LOD	6 TS	7 CTs	8 Scenario Overlap	9 U/E/S	10 Explanation
1-Swap EH Oil Pumps N-BOP, SRO								S	

2-PRZR Level White Channel Fails
  Low
    I-ATC, SRO & TS-SRO
					X			S	

3-First Stage Pressure Fails Low I-ATC, SRO & TS-SRO					X		X	S	Similar Event (1PT-485 fails Low) during 2016 ILE Scenario 2.
4-Loss of All AC M-ALL						X		S	
5-D1 Fails to AUTO Start C-BOP, SRO								S	

6-11 TD AFW Pump Fails to AUTO
  Start
    C-ATC, SRO
						X		S	

7-Stuck Rod After Rx Trip Requires
  Boration
    C-ATC, SRO
								S	

7 Events	**0**	**0**	**0**	**-**	**2**	**2**	**6**	**S**	

Facility: PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 and 2   Scenario: 3 (Low Pwr [10-8])   Exam Date: September 10 – 21, 2018

1 Event	2 Realism/ Cred.	3 Required Actions	4 Verifiable actions	5 LOD	6 TS	7 CTs	8 Scenario Overlap	9 U/E/S	10 Explanation
1-Raise Power to the POAH R-ATC, SRO								S	
2-Secure 12 MD Aux Feedwater Pump N-BOP, SRO								S	
3-PRZR Level White (INTRLK) Channel Fails High I-ATC, SRO & TS-SRO					X			S	
4-'B' PRZR PORV Leakage C-BOP, SRO & TS-SRO					X			S	
5-12 Steam Generator Tube Rupture M-ALL						4X		S	All CTs result from the SGTR event.
6-11 & 12 Safety Injection Pumps Fail to Automatically Start C-BOP, SRO								S	
7-CTMT Isolation Relay AUTO Actuation Failure C-BOP, SRO								S	
7 Events	**0**	**0**	**0**	**-**	**2**	**4**	**7**	**S**	

Facility: PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 and 2   Scenario: 4 (Rx Pwr 60%)   Exam Date: September 10 – 21, 2018

1 Event	2 Realism/ Cred.	3 Required Actions	4 Verifiable actions	5 LOD	6 TS	7 CTs	8 Scenario Overlap	9 U/E/S	10 Explanation
1-Place 2nd Letdown Orifice in Service N-BOP, SRO								S	
2-Raise Rx Power from 60% to 70% R-ATC, SRO								S	
3-Controlling PRZR Press Channel Fails Low I-ATC, SRO & TS-SRO					X		X	S	Similar Event (1PT-431 fails Low) during 2016 ILE Scenario 3.
4-SI Accumulator Leakage C-BOP, SRO & TS-SRO					X			S	
5-LBLOCA w/ Transfer to Recirculation M-ALL						X	X	S	Similar Event (LBLOCA w/ ECCS transfer to recirculation) during 2016 ILE Scenario 4.
6-11 & 12 RHR Pumps Fail to Automatically Start C-BOP, SRO						X		S	
7-SI to CC Relay Actuation Failure C-BOP, SRO								S	
8-12 MDAFWP Auto Start Failure C-BOP, SRO								S	
8 Events	**0**	**0**	**0**	**-**	**2**	**2**	**6**	**S**	

Instructions for Completing This Table:

      Use this table for each scenario for evaluation.

2   Check this box if the events are not related (e.g., seismic event followed by a pipe rupture) **OR** if the events do not obey the laws of physics and thermodynamics.

3, 4   In columns 3 and 4, check the box if there is **no** verifiable or required action, as applicable. Examples of required actions are as follows: (ES-301, D.5f)

- opening, closing, and throttling valves
- starting and stopping equipment
- raising and lowering level, flow, and pressure
- making decisions and giving directions
- acknowledging or verifying key alarms and automatic actions (Uncomplicated events that require no operator action beyond this should **not** be included on the operating test unless they are necessary to set the stage for subsequent events. (Appendix D, B.3))

5   Check this box if the level of difficulty is **not** appropriate.

6   Check this box if the event has a TS.

7   Check this box if the event has a critical task (CT). If the same CT covers more than one event, check the event where the CT started **only.**

8   Check this box if the event overlaps with another event on any of the last two NRC examinations. (Appendix D, C.1.f)

9   Based on the reviewer's judgment, is the event as written (U)nacceptable (requiring repair or replacement), in need of (E)nhancement, or (S)atisfactory? Mark the answer in column 9.

10   Record any explanations of the events here.

      In the shaded boxes, sum the number of check marks in each column.

- In column 1, sum the number of events.
- In columns 2–4, record the total number of check marks for each column.
- In column 5, based on the reviewer's judgement, place a checkmark only if the scenario's LOD is not appropriate.
- In column 6, TS are required to be ≥ 2 for each scenario. (ES-301, D.5.d)
- In column 7, preidentified CTs should be ≥ 2 for each scenario. (Appendix D; ES-301, D.5.d; ES-301-4)
- In column 8, record the number of events not used on the two previous NRC initial licensing exams. A scenario is considered unsatisfactory if there is < 2 new events. (ES-301, D.5.b; Appendix D, C.1.f)
- In column 9, record whether the scenario as written (U)nacceptable, in need of (E)nhancement, or (S)atisfactory from column 11 of the simulator scenario table.

Facility: PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 and 2   **Exam Date: September 10 – 21, 2018**

Scenario	1 Event Totals	2 Events Unsat.	3 TS Total	4 TS Unsat.	5 CT Total	6 CT Unsat.	7 % Unsat. Scenario Elements	8 U/E/S	11 Explanation
Scenario 1	7	0	2	0	2	0	0	S	
Scenario 2	7	0	2	0	4	0	0	S	
Scenario 3	7	0	2	0	2	0	0	S	
Scenario 4	8	0	2	0	2	0	0	S	

Instructions for Completing This Table:

Check or mark any item(s) requiring comment and explain the issue in the space provided.

1, 3, 5   For each simulator scenario, enter the **total** number of events (column 1), TS entries/actions (column 3), and CTs (column 5).

This number should match the respective scenario from the event-based scenario tables (the sum from columns 1, 6, and 7, respectively).

2, 4, 6   For each simulator scenario, evaluate each event, TS, and CT as (S)atisfactory, (E)nhance, or (U)nsatisfactory based on the following criteria:

a.   Events. Each event is described on a Form ES-D-2, including all switch manipulations, pertinent alarms, and verifiable actions. Event actions are balanced between at-the-controls and balance-of-plant applicants during the scenario. All event-related attributes on Form ES-301-4 are met. Enter the total number of unsatisfactory events in column 2.

b.   TS. A scenario includes at least two TS entries/actions across at least two different events. TS entries and actions are detailed on Form ES-D-2. Enter the total number of unsatisfactory TS entries/actions in column 4. (ES-301, D.5d)

c.   CT. Check that a scenario includes at least two preidentified CTs. This criterion is a target quantitative attribute, not an absolute minimum requirement. Check that each CT is explicitly bounded on Form ES-D-2 with measurable performance standards (see Appendix D). Enter the total number of unsatisfactory CTs in column 6.

7   In column 7, calculate the percentage of unsatisfactory scenario elements: $\left(\frac{2+4+6}{1+3+5}\right)100\%$

8   If the value in column 7 is > 20%, mark the scenario as (U)nsatisfactory in column 8. If column 7 is ≤ 20%, annotate with (E)nhancement or (S)atisfactory.

9   In column 11, explain each unsatisfactory event, TS, and CT. Editorial comments can also be added here.

Save initial review comments and detail subsequent comment resolution so that each exam-bound scenario is marked by a (S)atisfactory resolution on this form.

Facility: PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 and 2   **Exam Date: September 10 – 21, 2018**

	Total	Total Unsat.	Total Edits	Total Sat.	% Unsat.	Explanation
OPERATING TEST TOTALS						
Admin. JPMs	9	3	3	3		These numbers will probably change based upon resolution with the facility.
Sim/In-Plant JPMs	11	0	3	8		These numbers will probably change based upon resolution with the facility.
Scenarios	4	0	0	4		These numbers will probably remain unchanged.
Op. Test Totals:	24	3	6	15	12.5	This final percentage will be updated following onsite validation.

Instructions for Completing This Table:

Update data for this table from quality reviews and totals in the previous tables and then calculate the percentage of total items that are unsatisfactory and give an explanation in the space provided.

1. Enter the total number of items submitted for the operating test in the "Total" column. For example, if nine administrative JPMs were submitted, enter "9" in the "Total" items column for administrative JPMs. For scenarios, enter the total number of simulator scenarios.

2. Enter the total number of (U)nsatisfactory JPMs and scenarios from the two JPMs column 5 and simulator scenarios column 8 in the previous tables. Provide an explanation in the space provided.

3. Enter totals for (E)nhancements needed and (S)atisfactory JPMs and scenarios from the previous tables. This task is for tracking only.

4. Total each column and enter the amounts in the "Op. Test Totals" row.

5. Calculate the percentage of the operating test that is (U)nsatisfactory (Op. Test Total Unsat.)/(Op. Test Total) and place this value in the bolded "% Unsat." cell.

    Refer to ES-501, E.3.a, to rate the overall operating test as follows:
    *   satisfactory, if the "Op. Test Total" "% Unsat." is ≤ 20%
    *   unsatisfactory, if "Op. Test Total" "% Unsat." is > 20%

6. Update this table and the tables above with post-exam changes if the "as-administered" operating test required content changes, including the following:
    *   The JPM performance standards were incorrect.
    *   The administrative JPM tasks/keys were incorrect.
    *   CTs were incorrect in the scenarios (not including post scenario critical tasks defined in Appendix D).
    *   The EOP strategy was incorrect in a scenario(s).
    *   TS entries/actions were determined to be incorrect in a scenario(s).