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EXAM OUTLINE COMMENTS

#	Source	Comment	Resolution
1.	General Comment	All Admin JPMs need specific titles for ease of organization and listing on ES-303 forms. Also, JPMs must have significant discernable safety significant actions, operator manipulations, with potential consequences. Question the minimal discriminatory value if only have one or two minimal equipment manipulations with the rest as verify.	Acknowledged by licensee.
2.	Admin SRO JPM A.1.a	DW equipment and floor drain - Is this only a verification type JPM? May be low level of difficulty and low discriminatory value.	Determined to be adequate for TS aspect for SRO and activity for RO.
3.	Admin SRO JPM A.1.b	Worker call out. Use documents/data that would be expected to be available and used in the actual control room where the applicant must identify and request such documents. Instead of just giving the direct info needed to determine the call out. Otherwise, not too discriminating, i.e., recognize the answers given as cues.	Direct look up, also determined not useable for SRO aspect due to unavailable documents. Potential set up to fail. JPM replaced, after several attempts to improve.
4.	Admin SRO JPM A.2	Review work order for closure. What does this require? If no problems or actions are required then it is a fail safe JPM, low level of difficulty and questionable level of discriminatory value.	Enhanced during validation.
5.	Admin SRO/RO JPM A.3	Survey map, RWP, and entry/exposure limits? Depending on the significance and safety aspect, low level of difficulty and possible look up. In addition, potential predictability due to similarity of past two NRC exams (2001 7 2002) and the audit & pre-audit exams. The JPMs focuses on entry requirements into rad area, which would require use of RWP, survey maps, and understanding of entry and exposure limits. May require more in-depth knowledge of rad protection and add a fault or alternate actions.	Enhanced during validation. Added a failure criteria. Not predictable due to differences.
6.	Admin SRO JPM A.4	Determine EAL classification. Potential predictability due to similar actions for pre-audit and audit exams. Require more in-depth use of E-Plan, time critical activity, and PARs with a fault requiring alternate path.	Significantly enhanced during validation.
7.	Admin RO JPM A.1.b	Worker call out, RO to assume the watch. Based on the info, this appears to be a low level of difficulty. The RO, or applicant, will know or should know his overtime limits, either given in the cues of the JPM. This makes the JPM almost an easy look up type task. Questionable of the discriminatory value.	Modified during validation, determined to be sat.
8.	Admin RO JPM A.2	STP for offsite sources (electrical). What, if any, manipulations are there? If only to verify one offsite source not available, appears to be a simple look up. Questionable of the discriminatory value, and level of difficulty. What are the possibility of missing the STP step to notice that an electrical source is not available?	Incorporated an error which required identification and redoing the surveillance.
9.	Systems JPM	Which JPM is considered as an ESF? In particular for the SROU JPMs.	Defeat #1, Group 4 isolation for Radwaste

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10.	Control Room JPM B.1.b	Why low power, similar actions if at power? Are the required actions both to defeat the logic and also to manipulate RCIC for level control? Or is it just to install the defeats? Per the title it should require both.	Low pressure condition at low power (50 to 70 psig). Also, requires both actions. OK.
11.	Control Room JPM B.1.d	Manual start of core spray (for injection). If injection for water level control then the safety function is SF-2 instead of SF-4 (heat removal). Need to discern which, otherwise it is a repeat of SF-2 for JPM B.1.b, RCIC for level control.	Not for level control, actions for shutdown cooling. Safety function satisfactory.
12.	Control Room JPM B.1.e	Drain Torus to radwaste. Does this use RHR or TWLCS (torus water level control system)?	Use of RHR line. No TWLCS.
13.	Control Room JPM B.1.f	Manual Scram Functional Test SF-7 (RPS) is it similar to the system tested for JPM B.2.i (in-plant) xfer of alternate RPS? Can not test same system per ES 301 D.4.a.	It is instrument AC, and not a repeat of system.
14.	Control Room JPM B.1.g	K/A noted as 4000? Is it supposed to be K/A 400000, which is CCW? If it is, then possible repeat of systems for the safety function compared to in-plant JPM B.2.k, make up flow to RHRSW/ESW? Can not test same system per ES 301 D.4.a.	Corrected K/A to 400000. The system is GSW instead of CCW; however, JPM replaced due to potential weather issue. It is an outside JPM.
15.	Control Room JPM B.1.h	K/A is wrong. The JPM is for alternate leakage control a K/A 239003, but the outline notes K/A 272000 which is for Rad monitors. Same SF, ok.	OK, no MSIV leakage control system, it was removed. Leakage control now part of Rad control system.
16.	In-Plant JPM	For the SROU, need one of the in-plant JPM to be an emergency or an abnormal function. Per ES 301 D.4.b. Need to reselect B.2.k as one of two in-plant JPM for SROU.	Selected one of the other in-plant JPMs.
17.	In-Plant JPM B.2.i	K/A noted in outline, 262002 is for UPS. However, the title notes RPS which would be K/A 212000 or SF 7. Is it RPS or UPS? If UPS then comment item 13 is no longer valid.	It is for electrical bus.
18.	In-Plant JPM B.2.j	Questionable of discriminatory value and safety significance. K/A noted in outline is for emergency diesels (264000). It is for CRD system, which is also the same system tested in Control Room JPM B.1.a. [note you can test same safety function between control room and in-plant JPMs; however, you cannot test the same system.] Can not test same system per ES 301 D.4.a.	Corrected for K/A 201001 CRD Hydraulics. Ok, not considered same system.
19.	In-Plant JPM B.2.k	K/A noted in outline, 295018, is for loss of CCW. Therefore, system tested is for CCW, SF 8, which supports concern of testing same system as noted in item 14 above, i.e. similar to JPM B.1.g. [note you can test same safety function between control room and in-plant JPMs; however, you cannot test the same system.] Can not test same system per ES 301 D.4.a.	It is ESW and General Service Water. However, the JPM for the RHRSW/ESW was replaced. No longer a concern.
20.	Simulator Scenarios	General comment - need to have titles for each event on the ES D-1 outline.	Done.

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21.	Scenario #1	Fourth sentence in the initial conditions, notes the requirement to prove operability of relief valve PSV-4407. This is not an initial condition, it is part of the turnover associated with the STP for the PSV. Recommend deleting this statement. Also, in the last sentence of initial conditions, question on grammar, i.e. “has is isolated”?	Corrected.
22.	Scenario #1	Third paragraph, third sentence, “Control rods will have to be withdrawn to achieve the STP conditions.” This statement makes a decision for the applicants. Based on the turnover that the STP is to be completed, the applicants should discern the requirements of their actions to withdraw rods. It should also be part of the STP. Recommend deleting this statement. Also, same paragraph last sentence, typo, “When he STP...” It should be “the” not “he”.	Determined that is was not a concern.
23.	Scenario #1	What is meant by “is available” for the STP suppression pool in the turnover? Is the STP done or need to be done?	Procedure is available, not necessarily required to be performed at that time.
24.	Scenario #1	Event 1. For event type, missing the position given credit for the item, i.e., RO.	Corrected.
25.	Scenario #1	Event 2, the “C” IRM malfunction rely on another IRM being bypassed; however, there are no information in the initial conditions that another IRM was already bypassed. Without the additional IRM already bypassed, this malfunction does not require the anticipated TS actions. Also, potential for predictability due to similar type of action for an APRM malfunction which requires bypassing and reset ½ scram, in scenario # 1 of audit exam.	Added ‘A’ IRM as being bypassed due to I&C activities. Will allow unbypassing A to bypass C IRM.
26.	Scenario #1	Event 4, “B” FRV lockup, is this an auto function? Unless the applicant identifies the problem and manually locks up the FRV, there may not be any discernable actions by the applicant for the direct mitigation of the malfunction. If so If only require to unlock the FRV after identifying the problem, appears to be more of an normal evolution.	Enhanced to require manual contorl for feedwater flow.
27.	Scenario #1	Event 5, high vibs on condensate pump. What indications are given to have the applicant make such a decision to switch pumps, and what requires the mitigating action to start the standby pump? Is it an ARP or abnormal procedures?	ARP action.

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28.	Scenario #1	Event 6, lightning strike causing EDG to start. Questionable as a component failure, when it appears that there is no required mitigating action for the auto start. Only an apparent normal evolution to shutdown the EDG once it is not needed to be operating. Recommend an electrical fault that either requires starting the EDG or an immediate type of mitigating action to control the EDG, or loss of a bus, etc.. Questionable to give credit for mitigating a malfunction for an uneventful start of an EDG.	Enhanced, changed to jacket water cooling leak.
29.	Scenario #1	Event 7, PSV 4407 will not close. Question, what malfunction is this, and is it part of the STP? It also appears that it may be part of the post maintenance action?	After surv completed it spuriously opens and does not close.
30.	Scenario #1	Event 8, rupture of feedline at the check valve. Question, is it upstream or downstream of the check valve? Potential for unisolatable feedwater rupture.	On both sides of valve to establish the conditions necessary for the event.
31.	Scenario #1	Malfunctions after entry into EOP. Although the outline notes some malfunctions after the major event, i.e., CS pump trip, RHR inject valve failure, these malfunction does not appear to have required discernable mitigating actions for the applicants. If not, can not take credit. Although the outline does not take credit for the two malfunctions mentioned above, then it does not meet requirements of ES 301 D.5.d. Recommend enhancing these malfunctions for operator required actions.	Done.
32.	Scenario #2	Event 3, recirc speed control failure, if recirc is auto lock-up, then there is no discernable mitigating actions required of the applicant. It would only be a TS item. Also for TS item, is it in or out of the required band? Recommend that it is outside the band which requires more significant actions by RO.	Enhanced. Slow enough so it will not auto lock-up.
33.	Scenario #2	Event 4, what, if any, is the required panel action for the BOP? How is this significant for the BOP as a component failure? It appears to be only a TS item.	Must identify CV did not close, also required to reset isolation.
34.	Scenario #2	Event 5, GEMAC level “A” failure, appears somewhat predictable, if all of a sudden fails high. Is there a malfunction that could fail it as is or very slowly fail up, so as to test the applicant’s attention to the plant conditions as power is increased. Also, it may be a better position to have this malfunction before the recirc malfunction. Otherwise, after the recirc problem power increase may be halted indefinitely.	Slow malfunction. Must identify and diagnose the problems.
35.	Scenario #2	Event 7, slow leak in turbine oil system noted as a major malfunction; however, what are the required operator mitigating actions? It appears that Event 7 is actually an onset for Event 8, a component failure for the BOP for the lube oil pumps. It should be considered as one item, and not necessarily taken credit for both a major and a component failure. Recommend credit only as a component failure.	Combined as one event.

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36.	Scenario #2	Event 9, what is considered the major malfunction, the hydraulic leak or the ATWS? Or ATWS is a component failure?	Combination. ATWS is the major event with the lube oil leak a precursor to scram and turbine actions.
37.	Scenario #2	Question on malfunctions after EOP entry. Could there be some malfunctions for the MSIV, etc.? Also, with exception of the ATWS EOP for a short period, for pulling RPS fuses, only other EOP is EOP 1. However, once rods are inserted questions on use of additional EOPs. Need for explanation or details of the exam material to discern adequate level of challenge in use of EOPs. May want to enhance the level of difficulty of ATWS event. In addition, some question on predictability and similarity to scenario #1 of the audit exam which also has an ATWS (hydraulic ATWS vice electrical).	After validation considered adequate.
38.	Scenario #3	Need some more items on initial conditions. No equipment out of service? Increase level of challenge, LOD?	Done.
39.	Scenario #3	Event 2, APRM flow unit failure causing failure upscale of APRM required action to reset ½ scram. Potential predictability with scenario # 1 of audit exam, event 2, APRM fail upscale result in ½ scram.	Different actions. The pre-audit items are not items that the applicants are being tested on.
40.	Scenario #3	Event 4, Potential similarity with RO JPM on off-site electrical sources inop. What are the mitigating actions? It appears to be more like a normal evolution to shutdown a transformer. Also, typo in second sentence in event description, “transformer r to be,” the extra “r”.	Different steps from the JPM. Tech specs directs to perform the surv test. Suggested to change sequence to event 6.
41.	Scenario #3	Event 4, control rod drift. The event description notes rod drifts ‘in’; however, the mitigating action is noted to be to stop the rod drifting by applying emergency ‘in’ signal to the control rod. Question, is the rod drifting ‘in’ or ‘out’? In addition, the event notes entry into TS. However, it notes entry into TS on ‘either’ inop accumulator or control rod. Which is it supposed to be, the correct action?	System gives a de-energize signal to stop. Must then insert the control rod and take out of service, disarm.
42.	Scenario #3	Event 7, condenser hot well conductivity due to tube leak. How is this considered a major malfunction and what are the specific mitigating actions required? This is more of the onset of conditions and actions per the required procedure AOP 639 in Event 8, reactivity control. The two events should be considered as one event, for reactivity manipulation for the RO. Can not take credit for two separate events, a major and reactivity. ES 301 D.5.d In addition, this is potential predictability for degraded condenser actions from scenario # 1 of audit exam event 6, noted as a major malfunction for condenser degradation requiring a reactor scram. No info on the degradation, but again potential similarity in actions?	Change on audit. Different problems, one is a vacuum problem and the other is a conductivity problem. But has similar actions.

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43.	Scenario #3	Question on malfunctions after EOP entry. Although there are malfunctions after the reactor scram and EOP entry, e.g., HPCI malfunction and trip, there are no discernable actions to mitigate the HPCI trip. Recommend failure of HPCI to auto start or no flow, which requires mitigating actions as in manual start by the applicant, with subsequent trip to force the scenario to the end point of no high pressure injection.	Added OK.
44.	Transient Event Checklist	Event 7 for both scenarios 2 & 3 were listed as major malfunctions; however, it is part of Event 8 and should not be counted or taken credit as another major malfunction.	Done.
45.	Transient Event Checklist	Scenario 2 considered as a spare for crew with SROU, failed to accurately list the events for the SRO position. Also, Event 3 was incorrectly listed as a normal evolution when it is an instrument malfunction. Event 1 is the normal evolution and was not listed as such. Events 3 thru 6 and 8 was not listed as I/C malfunctions. Event 2 was listed as a TS which is incorrect, and should have been listed as a reactivity event.	Updated.