

PROPOSED OUTLINE COMMENTS

Facility: AN1

First Exam Date: March 30, 2020

Written Exam Outline		
(Date)		
	Comment	Resolution
1	NRC Generated	
2	Please put the two outlines back together (RO and SRO) into one file. We have to track overlap for the entire exam now per NRR so we need to see all the topics for both exams together to ensure no duplication.	Done.
3	Comment-you removed admin refuel requirements topic from written outlines for RO and stated that it is not applicable but you had an admin JPM on this very topic on the 2005 NRC exam. Explain.	Changed Job task analysis for RO position.
4		
5		

Administrative JPM Outline		
(Date)		
	Comment	Resolution
1	For A5-A8 – you can't use all of these JPMs because they are all on the previous two NRC exams and can't have been selected randomly from a fully developed bank of JPMs. I will outline the strategy for you to use below	Licensee agreed to all comments. Some items that aren't modeled they proposed alternate items which was acceptable to the CE.
2	For A1- I would like to see a reactivity balance calc performed then have the SRO review it for adequate shutdown margin in A5.	Licensee agreed to change it.
3	For A2 – I would like to see a time to boil/time to core uncover calc similar to the 2013 JPM but using different numbers	Licensee agreed to change it.
4	For A3 pick a different piece of equipment than the fuel oil transfer pump.	Licensee agreed to change it.
5	For A4 – okay	
6	For A5 – see comment 2 above.	Licensee agreed to change it.

7	For A6 – I would like to see a time to boil/time to core uncover calc similar to the 2013 SRO JPM but using different numbers	Licensee agreed to change it.
8	For A7 use A3 and apply TS to it for SRO only JPM.	Licensee agreed to change it.
9	For A8 determine max allowable venting time of a radioactive tank.	Licensee agreed to change it.
10	A9-okay	

Control Room / In-Plant System JPM Outline		
(Date)		
Comment		Resolution
1	Too much use of previous material so we will need to change some JPMs to give you some new topics and new JPMS	
2	For S1-okay	
3	For S2- create or find in your bank an inventory change (ie RCS fill) during mid-loop as a normal path JPM	Licensee agreed to change it but didn't use the mid-loop idea. Ce agreed with their alternate JPM.
4	For S3- create or find JPM on surveillance of PORV block valve (it fails) so close PORV – alt path	Licensee agreed to change it.
5	For S4- we won't use this JPM or the SF 4P on this exam (used same JPM too much). The Initiate Common feed becomes S4, not "4B" SF, it is 4S (a typo on outline)	Licensee agreed to change it.
6	For S5- SF5 will be during LOCA, transfer CS to recirc with cavitation due to sump blockage (alt path, EN, E, L) requires securing at least one pump to stop cavitation	Licensee agreed to change it.
7	For S6- modify this JPM to create a condition where the alt power supply breaker doesn't open and must be manually opened so the edg o/p bkr will close and power bus	Licensee agreed to change it but didn't use the idea the CE proposed. Ce agreed with their alternate topic JPM.
8	For S7-okay	
9	For S8- haven't done SF9 in forever in simulator-lets try a Control room ventilation alignment change and during that alignment a rad alarm comes in requiring isolation of CR ventilation (recirc) and manual isolation must be triggered-alt path	Licensee agreed to change it.

10	P1 and P2 are good	
11	P3 we need a different SF due to predictability (used too much for RCA JPM). You guys can pick but it needs to be RCA and normal path.	Licensee agreed to change it.

Simulator Scenario Outline Comments		
(Date)		
	Comment	Resolution
1	<p>General comments –</p> <ol style="list-style-type: none"> 1. events that are considered normal beans do not become CT's merely because if they don't get the actions done it creates an unplanned RPS trip. That creates a post scenario CT but this is unexpected and can't be planned that way for credit. 2. The NUREG requires that scenarios are varied over core life and core power. You have four of five scenarios that are at full power with no designated time in core life on the D-1 form. We need to have a low power, a mid power, and a high power scenario, and the low power is most operationally valid at BOL, while the high power should have a BOL and an EOL setup. The mid-power is most valid at BOL. So at least one scenario should be BOL, one MOL, and one EOL for diversity and to meet NUREG requirements. 3. You need to have a balanced set of beans for each scenario-so at least two for the BOP and two for the ATC, before the major. 4. Please use noun names with the pumps so we know what pump you are talking about (ex. P-4C is the #2 EDG cooling water pump). 5. Critical tasks are normally after the major events that place you in the EOPs because it is usually only then when you are actually starting to challenge safety functions such as core cooling, 	Licensee agreed to change most of the items as suggested at least until validation and we can see how they flow.

	<p>heat removal, or containment There are exceptions such as a stuck open porv at power (this is a clear loss of the rcs barrier). These are rare though, while at power, and if you put one there for one scenario, you need to look at doing it for the others to keep them consistent.</p> <ol style="list-style-type: none"> 6. CTs need to be more involved in the EOPs (deeper, more complex) I provided some suggested changes to all five scenarios, which we can discuss when you receive the comments. 7. The reason normal events are allowed to be substituted with malfunctions is to provide more competencies for grading and to allow for demonstration of control when the plant is moving (rx and secondary, via transients). It also raises the LOD of each scenario. We don't need the normal if you want to remove them. We will see how it all looks during validation for time. 8. To meet SOER 10-02 you need to incorporate bus losses into your scenarios. I have suggested two types in two different scenarios. 9. Two ICW equipment events. Need to change one to something else. See suggested list in separate file. 10. Inadvertent starts of safety equipment was included on two scenarios (one EFW, and one HPI) because these are OP Experience cases that we want to see how they are handled because industry reported to the commission that they have adequate training and procedures for these events. ANO had a switchyard event in 2019 where all three trains of EFW started so this is important. 	
2	See attached list for suggested changes to scenarios.	Yellow-new events, orange are majors (no changes to them)

ANO1 2020 Scenario changes recommended				
99.70%	99.70%	60%??	99.70%	2-5%
EOL	BOL?	BOL?	MOL?	BOL?
Scenario 1 (2020)	Scenario 2 (2020)	Scenario 3 (2020)	Scenario 4 (2020)	Scenario 5 (2020)
Shift ICW Pumps, Place P-33B in service, Secure P-33A	Align for 2 minute delithiation	withheld from Adams because not used	withheld from Adams because not used	Place A MFWP in service and secure P-75 Aux FW Pump
non-safety bus trip, lockout - has turbine cooling water on it	Inadvertent start of train A HPI - TS			Inadvertent start of all 3 trains of EFW due to switchyard fault-TS
P-3A CW pump sheared shaft - TS	Degrading Vacuum			Reset ARTS (not a CT)
LT-1001 Pressurizer Level Fails Low (T.S. 3.3.15)	TS Inverter Y11 failure			A' OTSG level inst fails low
Pressurizer Steam Space Leak (15 gpm) (T.S. 3.4.13)	Main Steam Header Pressure bias failure			Raise power to 10%
B MFW Pump Trip	Generator H2 Temp Controller Setpoint (TIC-4018) failure - not a CT			Group 7 Rods do not sequence on resulting in no overlap between Groups 6 & 7
Pressurizer Steam Space Leak increases to ~800 gpm	"A" Main Steam Line break inside containment			M-(ALL) Loss of Offsite Power
2 Stuck Control Rods – Emergency Boration	ESAS Channels 5 & 6 fail to actuate automatically			lockout of 2 EDG with TD EFW pump failure
RCPs must be secured within 2 minutes of LOSM	EFIC Vector Isolation failure for one EFW flow path to failed generator			EDG 1 fails to auto start
CT1: Trip ALL RCPs within 2 minutes of LOSM (< 30F) following the reactor trip.	CT19: Manually actuate Channels 5 & 6 prior to reporting the completion of RT-10.			CT8: BOP will start the #1 EDG within 15 minutes of Blackout. EAL escalation is required if the EDG is not started within 15 minutes.
CT23: Commence Emergency Boration within 15 minutes of the reactor trip with two stuck rods.	CT-16: Manually isolate all FW flow (MFW and EFW) to the faulted steam generator prior to steam generator reaching 400 inches (Carry-over into main steam lines)			CT88:ATC will restore EFW flow with A train EFW pump