

Facility: <b>Fermi Power Plant, Unit 2</b>														Date of Exam: <b>December 7 – 19, 2020</b>					
Tier	Group	RO K/A Category Points											SRO-Only Points						
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	A2	G*	Total			
1. Emergency and Abnormal Plant Evolutions	1	4	4	3	N/A			3	3	N/A			3	20	3	4	7		
	2	1	1	2	N/A			1	1	N/A			1	7	2	1	3		
	Tier Totals	5	5	5	N/A			4	4	N/A			4	27	5	5	10		
2. Plant Systems	1	2	2	2	3	3	3	2	3	2	2	2	26	2	3	5			
	2	1	1	1	1	1	1	2	1	1	1	1	12	0	2	1	3		
	Tier Totals	3	3	3	4	4	4	4	4	3	3	3	38	4	4	8			
3. Generic Knowledge and Abilities Categories					1		2		3		4		10		1	2	3	4	7
					2		3		2		3				2	2	1	2	

- Note: 1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outline sections (i.e., except for one category in Tier 3 of the SRO-only section, the “Tier Totals” in each K/A category shall not be less than two). (One Tier 3 radiation control K/A is allowed if it is replaced by a K/A from another Tier 3 category.)
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points, and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the outline. Systems or evolutions that do not apply at the facility should be deleted with justification. Operationally important, site-specific systems/evolutions that are not included on the outline should be added. Refer to Section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible. Sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
7. The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics’ IRs for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. If fuel-handling equipment is sampled in a category other than Category A2 or G\* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2. (Note 1 does not apply.) Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

G\* Generic K/As

- \* These systems/evolutions must be included as part of the sample (as applicable to the facility) when Revision 3 of the K/A catalog is used to develop the sample plan. They are not required to be included when using earlier revisions of the K/A catalog.
- \*\* These systems/evolutions may be eliminated from the sample (as applicable to the facility) when Revision 3 of the K/A catalog is used to develop the sample plan.

ES-401		BWR Examination Outline Emergency and Abnormal Plant Evolutions—Tier 1/Group 1 (RO)						Form ES-401-1	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
295001 (APE 1) Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	01						AK1.01 – Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION: Natural circulation (CFR: 41.8 to 41.10)	3.5	1
295003 (APE 3) Partial or Complete Loss of AC Power / 6		02					AK2.02 – Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF A.C. POWER and the following: Emergency generators (CFR: 41.7 / 45.8)	4.1	2
295004 (APE 4) Partial or Total Loss of DC Power / 6			01				AK3.01 – Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: Load shedding: Plant-Specific (CFR: 41.5 / 45.6)	2.6	3
295005 (APE 5) Main Turbine Generator Trip / 3				02			AA1.02 – Ability to operate and/or monitor the following as they apply to MAIN TURBINE GENERATOR TRIP: RPS (CFR: 41.7 / 45.6)	3.6	4
295006 (APE 6) Scram / 1					04		AA2.04 – Ability to determine and/or interpret the following as they apply to SCRAM: Reactor pressure (CFR: 41.10 / 43.5 / 45.13)	4.1	5
295016 (APE 16) Control Room Abandonment / 7						01.07	G2.1.7 – Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation. (CFR: 41.5 / 43.5 / 45.12, 45.13)	4.4	6
295018 (APE 18) Partial or Complete Loss of CCW / 8	01						AK1.01 – Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER: Effects on component/system operation (CFR: 41.8 to 41.10)	3.5	7
295019 (APE 19) Partial or Complete Loss of Instrument Air / 8		09					AK2.09 – Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR and the following: Containment (CFR: 41.7 / 45.8)	3.3	8
295021 (APE 21) Loss of Shutdown Cooling / 4			02				AK3.02 – Knowledge of the reasons for the following responses as they apply to LOSS OF SHUTDOWN COOLING: Feeding and bleeding reactor vessel (CFR: 41.5 / 45.6)	3.3	9
295023 (APE 23) Refueling Accidents / 8				01			AA1.01 – Ability to operate and/or monitor the following as they apply to REFUELING ACCIDENTS: Secondary containment ventilation (CFR: 41.7 / 45.6)	3.3	10
295024 High Drywell Pressure / 5					04		EA2.04 – Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Suppression chamber pressure: Plant-Specific (CFR: 41.10 / 43.5 / 45.13)	3.9	11
295025 (EPE 2) High Reactor Pressure / 3						04.08	G2.4.8 – Knowledge of how abnormal operating procedures are used in conjunction with EOPs. (CFR: 41.10 / 43.5 / 45.13)	3.8	12

295026 (EPE 3) Suppression Pool High Water Temperature / 5	02						EK1.02 – Knowledge of the operational implications of the following concepts as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE: Steam condensation (CFR: 41.8 to 41.10)	3.5	13
295027 (EPE 4) High Containment Temperature (Mark III Containment Only) / 5									
295028 (EPE 5) High Drywell Temperature (Mark I and Mark II only) / 5		01					EK2.01 – Knowledge of the interrelations between HIGH DRYWELL TEMPERATURE and the following: Drywell spray: Mark I & II (CFR: 41.7 / 45.8)	3.7	14
295030 (EPE 7) Low Suppression Pool Water Level / 5			01				EK3.01 – Knowledge of the reasons for the following responses as they apply to LOW SUPPRESSION POOL WATER LEVEL: Emergency depressurization (CFR: 41.5 / 45.6)	3.8	15
295031 (EPE 8) Reactor Low Water Level / 2				10			EA1.10 – Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL: Control rod drive (CFR: 41.7 / 45.6)	3.6	16
295037 (EPE 14) Scram Condition Present and Reactor Power Above APRM Downscale or Unknown / 1					04		EA2.04 – Ability to determine and/or interpret the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN: Suppression pool temperature (CFR: 41.10 / 43.5 / 45.13)	4.0	17
295038 (EPE 15) High Offsite Radioactivity Release Rate / 9						04.21	G2.4.21 – Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolants system integrity, containment conditions, radioactivity release control, etc. (CFR: 41.7 / 43.5 / 45.12)	4.0	18
600000 (APE 24) Plant Fire On Site / 8	02						AK1.02 – Knowledge of the operation applications of the following concepts as they apply to PLANT FIRE ON SITE: Fire Fighting (CFR: 41.8 - 41.10)	2.9	19
700000 (APE 25) Generator Voltage and Electric Grid Disturbances / 6		01					AK2.01 – Knowledge of the interrelations between GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES and the following: Motors (CFR: 41.4, 41.5, 41.7, 41.10 / 45.8)	3.1	20
K/A Category Totals:	4	4	3	3	3	3	Group Point Total:		20

ES-401		BWR Examination Outline Emergency and Abnormal Plant Evolutions—Tier 1/Group 2 (RO)						Form ES-401-1	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
295002 (APE 2) Loss of Main Condenser Vacuum / 3			05				AK3.05 – Knowledge of the reasons for the following responses as they apply to LOSS OF MAIN CONDENSER VACUUM: Main steam isolation valve: Plant-Specific (CFR: 41.5 / 45.6)	3.4	21
295007 (APE 7) High Reactor Pressure / 3									
295008 (APE 8) High Reactor Water Level / 2				03			AA1.03 – Ability to operate and/or monitor the following as they apply to HIGH REACTOR WATER LEVEL: Main steam system: Plant-Specific. (CFR: 41.7 / 45.6)	3.1	22
295009 (APE 9) Low Reactor Water Level / 2									
295010 (APE 10) High Drywell Pressure / 5					02		AA2.02 – Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Drywell pressure (CFR: 41.10 / 43.5 / 45.13)	3.8	23
295011 (APE 11) High Containment Temperature (Mark III Containment only) / 5									
295012 (APE 12) High Drywell Temperature / 5									
295013 (APE 13) High Suppression Pool Temperature. / 5									
295014 (APE 14) Inadvertent Reactivity Addition / 1									
295015 (APE 15) Incomplete Scram / 1									
295017 (APE 17) Abnormal Offsite Release Rate / 9									
295020 (APE 20) Inadvertent Containment Isolation / 5 & 7						01. 23	G2.1.23 – Ability to perform specific system and integrated plant procedures during all modes of plant operation. (CFR: 41.10 / 43.5 / 45.2, 45.6)	4.3	24
295022 (APE 22) Loss of Control Rod Drive Pumps / 1									
295029 (EPE 6) High Suppression Pool Water Level / 5									
295032 (EPE 9) High Secondary Containment Area Temperature / 5									
295033 (EPE 10) High Secondary Containment Area Radiation Levels / 9									
295034 (EPE 11) Secondary Containment Ventilation High Radiation / 9									
295035 (EPE 12) Secondary Containment High Differential Pressure / 5	02						EK1.02 – Knowledge of the operational implications of the following concepts as they apply to SECONDARY CONTAINMENT HIGH DIFFERENTIAL PRESSURE: Radiation release (CFR: 41.8 to 41.10)	3.7	25
295036 (EPE 13) Secondary Containment High Sump/Area Water Level / 5		03					EK2.03 – Knowledge of the interrelations between SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL and the following: Radwaste (CFR: 41.7 / 45.8)	2.8	26

500000 (EPE 16) High Containment Hydrogen Concentration / 5			02				EK3.02 – Knowledge of the reasons for the following responses as they apply to HIGH PRIMARY CONTAINMENT HYDROGEN CONCENTRATIONS: Operation of drywell recirculating fans (CFR: 41.5 / 45.6)	2.8	27
K/A Category Point Totals:	1	1	2	1	1	1	Group Point Total:		7

ES-401	BWR Examination Outline Plant Systems—Tier 2/Group 1 (RO)											Form ES-401-1		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	K/A Topic(s)	IR	#
203000 (SF2, SF4 RHR/LPCI) RHR/LPCI: Injection Mode				05								K4.05 – Knowledge of RHR/LPCI: INJECTION MODE (PLANT-SPECIFIC) design feature(s) and/or interlocks which provide for the following: Prevention of water hammer (CFR: 41.7)	3.2	28
205000 (SF4 SCS) Shutdown Cooling			04		02							K5.02 – Knowledge of the operational implications of the following concepts as they apply to SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE): Valve operation (CFR: 41.5 / 45.3)	2.8	29
												K3.04 – Knowledge of the effect that a loss or malfunction of the SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE) will have on following: Recirculation loop temperatures (CFR: 41.7 / 45.4)	3.7	49
206000 (SF2, SF4 HPCIS) High-Pressure Coolant Injection						10						K6.10 – Knowledge of the effect that a loss or malfunction of the following will have on the HIGH PRESSURE COOLANT INJECTION SYSTEM: PCIS: BWR 2,3,4 (CFR: 41.7 / 45.7)	3.8	30
207000 (SF4 IC) Isolation (Emergency) Condenser														
209001 (SF2, SF4 LPCS) Low-Pressure Core Spray							08					A1.08 – Ability to predict and/or monitor changes in parameters associated with operating the LOW PRESSURE CORE SPRAY SYSTEM controls including: System lineup. (CFR: 41.5 / 45.5)	3.3	31
209002 (SF2, SF4 HPCS) High-Pressure Core Spray														
211000 (SF1 SLCS) Standby Liquid Control								02				A2.02 – Ability to (a) predict the impacts of the following on the STANDBY LIQUID CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failure of explosive valve to fire (CFR: 41.5 / 45.6)	3.6	32
212000 (SF7 RPS) Reactor Protection									04			A3.04 – Ability to monitor automatic operations of the REACTOR PROTECTION SYSTEM including: System status light and alarms (CFR: 41.7 / 45.7)	3.9	33
215003 (SF7 IRM) Intermediate-Range Monitor			05									A4.03 – Ability to manually operate and/or monitor in the control room: IRM range switches (CFR: 41.7 / 45.5 to 45.8)	3.6	34
												K4.05 – Knowledge of INTERMEDIATE RANGE MONITOR (IRM) SYSTEM design feature(s) and/or interlocks which provide for the following: Changing detector position (CFR: 41.7)	2.9	50
215004 (SF7 SRMS) Source-Range Monitor											01. 27	G2.1.27 – Knowledge of system purpose and/or function. (CFR: 41.7)	3.9	35

215005 (SF7 PRMS) Average Power Range Monitor/Local Power Range Monitor	10																	K1.10 – Knowledge of the physical connections and/or cause-effect relationships between AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM and the following: Reactor manual control system: Plant-Specific (CFR: 41.2 to 41.9 / 45.7, 45.8)	3.3	36
217000 (SF2, SF4 RCIC) Reactor Core Isolation Cooling		02																K2.02 – Knowledge of electrical power supplies to the following: RCIC initiation signals (logic) (CFR: 41.7)	2.8	37
218000 (SF3 ADS) Automatic Depressurization			01															K3.01 – Knowledge of the effect that a loss or malfunction of the AUTOMATIC DEPRESSURIZATION SYSTEM will have on following: Restoration of reactor water level after a break that does not depressurize the reactor when required (CFR: 41.7 / 45.4)	4.4	38
223002 (SF5 PCIS) Primary Containment Isolation/Nuclear Steam Supply Shutoff				08														K4.08 – Knowledge of PRIMARY CONTAINMENT ISOLATION SYSTEM/ NUCLEAR STEAM SUPPLY SHUT-OFF design feature(s) and/or interlocks which provide for the following: Manual defeating of selected isolations during specified emergency conditions (CFR: 41.7)	3.3	39
						04												K6.04 – Knowledge of the effect that a loss or malfunction of the following will have on the PRIMARY CONTAINMENT ISOLATION SYSTEM/ NUCLEAR STEAM SUPPLY SHUT-OFF: Nuclear boiler instrumentation (CFR: 41.7 / 45.7)	3.3	51
239002 (SF3 SRV) Safety Relief Valves						04												K5.04 – Knowledge of the operational implications of the following concepts as they apply to RELIEF/SAFETY VALVES: Tail pipe temperature monitoring (CFR: 41.5 / 45.3)	3.3	40
259002 (SF2 RWLCS) Reactor Water Level Control							04											K6.04 – Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR WATER LEVEL CONTROL SYSTEM: Reactor feedwater flow input (CFR: 41.7 / 45.7)	3.1	41
261000 (SF9 SGTS) Standby Gas Treatment									01									A1.01 – Ability to predict and/or monitor changes in parameters associated with operating the STANDBY GAS TREATMENT SYSTEM controls including: System flow (CFR: 41.5 / 45.5)	2.9	42
262001 (SF6 AC) AC Electrical Distribution										06								A2.06 – Ability to (a) predict the impacts of the following on the AC ELECTRICAL DISTRIBUTION; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Deenergizing a plant bus (CFR: 41.5 / 45.6)	2.7	43
262002 (SF6 UPS) Uninterruptable Power Supply (AC/DC)											01							A3.01 – Ability to monitor automatic operations of the UNINTERRUPTIBLE POWER SUPPLY (AC/DC) including: Transfer from preferred to alternate source (CFR: 41.7 / 45.7)	2.8	44

263000 (SF6 DC) DC Electrical Distribution											01	A4.01 – Ability to manually operate and/or monitor in the control room: Major breakers and control power fuses: Plant-Specific (CFR: 41.7 / 45.5 to 45.8) K5.01 – Knowledge of the operational implications of the following concepts as they apply to D.C. ELECTRICAL DISTRIBUTION: Hydrogen generation during battery charging (CFR: 41.5 / 45.3)	3.3	45	
					01									2.6	52
264000 (SF6 EGE) Emergency Generators (Diesel/Jet) EDG												02.36	G2.2.36 – Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations. (CFR: 41.10 / 43.2 / 45.13)	3.1	46
300000 (SF8 IA) Instrument Air	05												K1.05 – Knowledge of the connections and/or cause-effect relationships between INSTRUMENT AIR SYSTEM and the following: Main steam isolation valve air (CFR: 41.2 to 41.9 / 45.7, 45.8)	3.1	47
400000 (SF8 CCS) Component Cooling Water		01										02	K2.01 – Knowledge of the electrical power supplies to the following: CCW pumps (CFR: 41.7)  A2.02 – Ability to (a) predict the impacts of the following on the COMPONENT COOLING WATER SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High/low surge tank level (CFR: 41.5 / 45.6)	2.9	48
														2.8	53
510000 (SF4 SWS*) Service Water (Normal and Emergency)															
K/A Category Point Totals:	2	2	2	3	3	3	2	3	2	2	2		Group Point Total:		26



ES-401	BWR Examination Outline Plant Systems—Tier 2/Group 2 (RO)											Form ES-401-1		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	K/A Topic(s)	IR	#
201001 (SF1 CRDH) CRD Hydraulic							02					A1.02 – Ability to predict and/or monitor changes in parameters associated with operating the CONTROL ROD DRIVE HYDRAULIC SYSTEM controls including: CRD cooling water header pressure (CFR: 41.5 / 45.5)	2.9	54
201002 (SF1 RMCS) Reactor Manual Control														
201003 (SF1 CRDM) Control Rod and Drive Mechanism														
201004 (SF7 RSCS) Rod Sequence Control														
201005 (SF1, SF7 RCIS) Rod Control and Information														
201006 (SF7 RWMS) Rod Worth Minimizer										04		A3.04 – Ability to monitor automatic operations of the ROD WORTH MINIMIZER SYSTEM (RWM) (PLANT SPECIFIC) including: Control rod movement blocks: Plant-Specific (CFR: 41.7 / 45.7)	3.5	55
202001 (SF1, SF4 RS) Recirculation														
202002 (SF1 RSCTL) Recirculation Flow Control														
204000 (SF2 RWCU) Reactor Water Cleanup														
214000 (SF7 RPIS) Rod Position Information														
215001 (SF7 TIP) Traversing In-Core Probe											03	A4.03 – Ability to manually operate and/or monitor in the control room: Isolation valves: Mark I & II (CFR: 41.7 / 45.5 to 45.8)	3.0	56
215002 (SF7 RBMS) Rod Block Monitor											04.46	G2.4.46 – Ability to verify that the alarms are consistent with the plant conditions. (CFR: 41.10 / 43.5 / 45.3, 45.12)	4.2	57
216000 (SF7 NBI) Nuclear Boiler Instrumentation														
219000 (SF5 RHR SPC) RHR/LPCI: Torus/Suppression Pool Cooling Mode														
223001 (SF5 PCS) Primary Containment and Auxiliaries														
226001 (SF5 RHR CSS) RHR/LPCI: Containment Spray Mode														
230000 (SF5 RHR SPS) RHR/LPCI: Torus/Suppression Pool Spray Mode	04											K1.04 – Knowledge of the physical connections and/or cause-effect relationships between RHR/LPCI: TORUS/SUPPRESSION POOL SPRAY MODE and the following: LPCI/RHR pumps (CFR: 41.2 to 41.9 / 45.7, 45.8)	3.4	58
233000 (SF9 FPCCU) Fuel Pool Cooling/Cleanup			08									K3.08 – Knowledge of the effect that a loss or malfunction of the FUEL POOL COOLING AND CLEAN-UP will have on the following: Refueling operations (CFR: 41.7 / 45.6)	2.9	59
234000 (SF8 FH) Fuel-Handling Equipment														
239001 (SF3, SF4 MRSS) Main and Reheat Steam														
239003 (SF9 MSVLC) Main Steam Isolation Valve Leakage Control														
241000 (SF3 RTPRS) Reactor/Turbine Pressure Regulating				13								K4.13 – Knowledge of REACTOR/TURBINE PRESSURE REGULATING SYSTEM design feature(s) and/or interlocks which provide for the following: Turbine trip testing: Plant-Specific (CFR: 41.7)	2.9	60



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E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
295001 (APE 1) Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4						04.49	G2.4.49 – Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. (CFR: 41.10 / 43.2 / 45.6)	4.4	76
295003 (APE 3) Partial or Complete Loss of AC Power / 6									
295004 (APE 4) Partial or Total Loss of DC Power / 6									
295005 (APE 5) Main Turbine Generator Trip / 3									
295006 (APE 6) Scram / 1					06		AA2.06 – Ability to determine and/or interpret the following as they apply to SCRAM: Cause of reactor SCRAM (CFR: 41.10 / 43.5 / 45.13)	3.8	77
295016 (APE 16) Control Room Abandonment / 7									
295018 (APE 18) Partial or Complete Loss of CCW / 8									
295019 (APE 19) Partial or Complete Loss of Instrument Air / 8									
295021 (APE 21) Loss of Shutdown Cooling / 4						01.31	G2.1.31 – Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup. (CFR: 41.10 / 45.12)	4.3	78
295023 (APE 23) Refueling Accidents / 8									
295024 High Drywell Pressure / 5					06		EA2.06 – Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Suppression pool temperature (CFR: 41.10 / 43.5 / 45.13)	4.1	79
295025 (EPE 2) High Reactor Pressure / 3									
295026 (EPE 3) Suppression Pool High Water Temperature / 5									
295027 (EPE 4) High Containment Temperature (Mark III Containment Only) / 5									
295028 (EPE 5) High Drywell Temperature (Mark I and Mark II only) / 5						04.06	G2.4.6 – Knowledge of EOP mitigation strategies. (CFR: 41.10 / 43.5 / 45.13)	4.7	80
295030 (EPE 7) Low Suppression Pool Water Level / 5									
295031 (EPE 8) Reactor Low Water Level / 2									
295037 (EPE 14) Scram Condition Present and Reactor Power Above APRM Downscale or Unknown / 1									
295038 (EPE 15) High Offsite Radioactivity Release Rate / 9					04		EA2.04 – Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Source of off-site release (CFR: 41.10 / 43.5 / 45.13)	4.5	81

600000 (APE 24) Plant Fire On Site / 8						04. 30	G2.4.30 – Knowledge of events related to system operation/ status that must be reported to internal organizations or external agencies, such as the State, the NRC, or the transmission system operator. (CFR: 41.10 / 43.5 / 45.11)	4.1	82
700000 (APE 25) Generator Voltage and Electric Grid Disturbances / 6									
K/A Category Totals:						3	4	Group Point Total:	7

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E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
295002 (APE 2) Loss of Main Condenser Vacuum / 3									
295007 (APE 7) High Reactor Pressure / 3					01		AA2.01 – Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE: Reactor pressure (CFR: 41.10 / 43.5 / 45.13)	4.1	83
295008 (APE 8) High Reactor Water Level / 2									
295009 (APE 9) Low Reactor Water Level / 2						04.03	G2.4.3 – Ability to identify post-accident instrumentation. (CFR: 41.6 / 45.4)	3.9	84
295010 (APE 10) High Drywell Pressure / 5									
295011 (APE 11) High Containment Temperature (Mark III Containment only) / 5									
295012 (APE 12) High Drywell Temperature / 5									
295013 (APE 13) High Suppression Pool Temperature. / 5									
295014 (APE 14) Inadvertent Reactivity Addition / 1									
295015 (APE 15) Incomplete Scram / 1					02		AA2.02 – Ability to determine and/or interpret the following as they apply to INCOMPLETE SCRAM: Control rod position (CFR: 41.10 / 43.5 / 45.13)	4.2	85
295017 (APE 17) Abnormal Offsite Release Rate / 9									
295020 (APE 20) Inadvertent Containment Isolation / 5 & 7									
295022 (APE 22) Loss of Control Rod Drive Pumps / 1									
295029 (EPE 6) High Suppression Pool Water Level / 5									
295032 (EPE 9) High Secondary Containment Area Temperature / 5									
295033 (EPE 10) High Secondary Containment Area Radiation Levels / 9									
295034 (EPE 11) Secondary Containment Ventilation High Radiation / 9									
295035 (EPE 12) Secondary Containment High Differential Pressure / 5									
295036 (EPE 13) Secondary Containment High Sump/Area Water Level / 5									
500000 (EPE 16) High Containment Hydrogen Concentration / 5									
K/A Category Point Totals:					2	1	Group Point Total:		3



264000 (SF6 EGE) Emergency Generators (Diesel/Jet) EDG											02.42	G2.2.42 – Ability to recognize system parameters that are entry-level conditions for Technical Specifications. (CFR: 41.7, 41.10 / 43.2, 43.3 / 45.3)	4.6	90	
300000 (SF8 IA) Instrument Air															
400000 (SF8 CCS) Component Cooling Water															
510000 (SF4 SWS*) Service Water (Normal and Emergency)															
K/A Category Point Totals:								2				3	Group Point Total:		5





290003 (SF9 CRV) Control Room Ventilation										03				A2.03 – Ability to (a) predict the impacts of the following on the CONTROL ROOM HVAC; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Initiation/ reconfiguration failure (CFR: 41.5 / 45.6)	3.6	93
290002 (SF4 RVI) Reactor Vessel Internals																
51001 (SF8 CWS*) Circulating Water																
K/A Category Point Totals:										2				1	Group Point Total:	3

Facility: <b>Fermi Power Plant, Unit 2</b>			Date of Exam: <b>December 7 – 19, 2020</b>			
Category	K/A #	Topic	RO		SRO-only	
			IR	#	IR	#
1. Conduct of Operations	2.1.37	Knowledge of procedures, guidelines, or limitations associated with reactivity management. (CFR: 41.1 / 43.6 / 45.6)	4.3	66		
	2.1.38	Knowledge of the station's requirements for verbal communications when implementing procedures. (CFR: 41.10 / 45.13)	3.7	67		
	2.1.15	Knowledge of administrative requirements for temporary management directives, such as standing orders, night orders, operations memos, etc. (CFR: 41.10 / 45.12)			3.4	94
	2.1.35	Knowledge of fuel-handling responsibilities of SROs. (CFR: 41.10 / 43.7)			3.9	95
	Subtotal			2		2
2. Equipment Control	2.2.12	Knowledge of surveillance procedures. (CFR: 41.10 / 45.13)	3.7	68		
	2.2.22	Knowledge of limiting conditions for operations and safety limits. (CFR: 41.5 / 43.2 / 45.2)	4.0	69		
	2.2.41	Ability to obtain and interpret station electrical and mechanical drawings. (CFR: 41.10 / 45.12, 45.13)	3.5	70		
	2.2.5	Knowledge of the process for making design or operating changes to the facility. (CFR: 41.10 / 43.3 / 45.13)			3.2	96
	2.2.14	Knowledge of the process for controlling equipment configuration or status. (CFR: 41.10 / 43.3 / 45.13)			4.3	97
Subtotal			3		2	
3. Radiation Control	2.3.4	Knowledge of radiation exposure limits under normal or emergency conditions. (CFR: 41.12 / 43.4 / 45.10)	3.2	71		
	2.3.12	Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc. (CFR: 41.12 / 45.9, 45.10)	3.2	72		
	2.3.14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities. (CFR: 41.12 / 43.4 / 45.10)			3.8	98
	Subtotal			2		1
4. Emergency Procedures/Plan	2.4.13	Knowledge of crew roles and responsibilities during EOP usage. (CFR: 41.10 / 45.12)	4.0	73		
	2.4.26	Knowledge of facility protection requirements, including fire brigade and portable fire fighting equipment usage. (CFR: 41.10 / 43.5 / 45.12)	3.1	74		
	2.4.32	Knowledge of operator response to loss of all annunciators. (CFR: 41.10 / 43.5 / 45.13)	3.6	75		

	2.4.16	Knowledge of EOP implementation hierarchy and coordination with other support procedures or guidelines such as, operating procedures, abnormal operating procedures, and severe accident management guidelines. (CFR: 41.10 / 43.5 / 45.13)			4.4	99
	2.4.28	Knowledge of procedures relating to a security event (non-safeguards information). (CFR: 41.10 / 43.5 / 45.13)			4.1	100
	Subtotal			3		2
Tier 3 Point Total				10		7