Written E	Examination Q	uestion Worksheet	E For	m-401-5
tline Cross-:	reference:	Level Tier # Group # K/A # Importance Ratin	$\begin{array}{r} \text{RO} \\ 1 \\ \hline 1 \\ \hline 007.2.0 \\ \hline 4.5 \end{array}$	SRO 04.02
on:	RO# 1, SEE A	TTACHED		
er:	A SEE ATTACH	IED		
ence(s): _ eviously _ -	STPT 1.1 and OP-1C Start	<b>3.1,</b> <b>up to Power Oper</b> licants during even	ration step 5.24	
ive: LP	0361/004	incants during exam	(As available)	
: Ba Mo Ne	nk # odified Bank w	PBNP EXAM B	<b>BANK</b> (Note changes or at	tach parent)
y: La	st NRC Exam	Bank: Point B	Beach 2002	
ns validated at vide the inform	the facility since nation will necess	10/95 will generally usitate a detailed review	undergo less rigorous re v of every question)	eview by the
ive Level:	Memory or Comprehen	Fundamental Kno sion or Analysis	wledge	-
	Written E tline Cross- tline Cross- on: cr: cr: tional): ence(s): eviously ces to be pr ive: LP ces to be pr ive:	Written Examination Q         tline Cross-reference:         on:       RO# 1, SEE A         er:       A         tional):       SEE ATTACH         ence(s):       STPT 1.1 and         eviously       OP-1C Start         ive:       LP0361/004         :       Bank #         Modified Bank       New         y:       Last NRC Exam         ns validated at the facility since       Vide the information will necess	Written Examination Question Worksheet         tline Cross-reference:       Level         Tier #         Group #         K/A #         Importance Ratin         on:       RO# 1, SEE ATTACHED         er: <b>A</b> tional):       SEE ATTACHED         sence(s):       OP-1C Startup to Power Open         eviously       OP-1C Startup to Power Open         ive:       LP0361/004         ::       Bank #       PBNP EXAM E         Modified Bank       New         y:       Last NRC Exam       Bank: Point E         ns validated at the facility since 10/95 will generally to vide the information will necessitate a detailed review	Written Examination Question Worksheet       Form         tline Cross-reference:       Level       RO         Tier #       1         Group #       1         K/A #       007.2.4         Importance Rating       4.5         on:       RO# 1, SEE ATTACHED         er:       A         tional):       SEE ATTACHED         ser:       A         tional):       SEE ATTACHED         exc:       A         tional):       STPT 1.1 and 3.1,         OP-1C Startup to Power Operation step 5.24         eviously

ES-401 Written	Examination Q	Question Worksheet	Form	n-401-5
Examination Outline Cros	s-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 008.AF 3.2	SRO  \$1.01
Proposed Question:	RO# 2, SEE 2	ATTACHED		
Proposed Answer:	<u> </u>			
Explanation (Optional):	SEE ATTAC	HED		
Technical Reference(s): (Attach if not previously provided)	Steam Table	s/Mollier diagram (Giv	ven)	
Proposed references to be examination:	provided to app	olicants during	Steam Table diagram	es/Mollier
Learning Objective: <u>N</u>	N-RO-01-L012	<u>I/002</u> (As	s available)	
Question Source: E	3ank # Modified Bank New	PBNP EXAM BANH	C changes or at	tach parent)
Question History:	Last NRC Exam	Bank: Point Beach	2002	
(Optional - Questions validated NRC; failure to provide the info	at the facility sinc prmation will nece	e 10/95 will generally underg ssitate a detailed review of ev	go less rigorous re very question)	view by the
Question Cognitive Level:	: Memory o Comprehe	r Fundamental Knowled nsion or Analysis	ge	
10 CFR Part 55 Content:	55.41 <u> </u> 55.43	X		
K/A Statement: Knowledge a Pressurizer Vapor Space ac valves	e of the operatior ccident: Thermod	nal implications of the follo lynamics and flow characte	owing concepts a eristics of open	as they apply to or leaking

ES-401 Writ	tten Examination (	Question Worksheet	For	rm-401-5
Examination Outline C	ross-reference:	Level Tier # Group # K/A #	RO 1 1 009.E	SRO <b>K2.03</b>
Proposed Question:	RO# 3, SEE	Importance Rating		
Proposed Answer:	С			
Explanation (Optional)	SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous provided)	EOP 1.2 Sm steps 5 and 8 ly	all Break LOCA Coo 8 and Basis.	ldown and De	pressurizatio
Proposed references to	be provided to ap	plicants during examina	ation:	
Learning Objective:	LP0435/010	(1	As available)	
Ouestion Source:	Bank # Modified Bank New	<u>INPO 19559</u> (No	ote changes or a	ttach parent)
Question History:	Last NRC Exan	Bank: INPO 195	59 DC Cook 20	)01
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally unde essitate a detailed review of	ergo less rigorous i every question)	review by the
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowle ension or Analysis	edge	_
10 CFR Part 55 Conter	nt: 55.41	X		
K/A Statement: Knowle	edge of the interrela	tions between the small b	reak LOCA and	the following

ES-401 W	ritten Examination (	Question Worksheet	For	rm-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 011.E 3.7	SRO  <b>K3.10</b>
Proposed Question:	RO# 4, SEE	ATTACHED		
Proposed Answer:	B SEE ATTAC	THED		
(Attach if not previo				
(Attach if not previo provided) Proposed references	to be provided to ap	plicants during examinat	tion:	
(Attach if not previo provided) Proposed references Learning Objective:	to be provided to ap	plicants during examinat	tion: s available)	
(Attach if not previo provided) Proposed references Learning Objective: Question Source:	to be provided to ap LP1999/001 Bank # Modified Bank New	plicants during examinat (A 	tion: s available) e changes or a	uttach parent)
(Attach if not previo provided) Proposed references Learning Objective: Ouestion Source: Question History:	to be provided to ap LP1999/001 Bank # Modified Bank New Last NRC Exan	plicants during examinat (A (Not <u>NEW</u> n <u>Bank: NEW</u>	tion: s available) e changes or a	ttach parent)
<ul> <li>(Attach if not previo provided)</li> <li>Proposed references</li> <li>Learning Objective:</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions val NRC; failure to provide to</li> </ul>	to be provided to ap LP1999/001 Bank # Modified Bank New Last NRC Exan lidated at the facility since	plicants during examinat (A (Not <u>NEW</u> n <u>Bank: NEW</u> ce 10/95 will generally under essitate a detailed review of e	tion: tion: s available) te changes or a go less rigorous i very question)	ttach parent)
<ul> <li>(Attach if not previo provided)</li> <li>Proposed references</li> <li>Learning Objective:</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions va NRC; failure to provide to provide</li></ul>	to be provided to ap LP1999/001 Bank # Modified Bank New Last NRC Exan lidated at the facility since the information will nece Level: Memory of Comprehe	plicants during examinat (A (Not <u>NEW</u> n <u>Bank: NEW</u> ce 10/95 will generally under essitate a detailed review of e or Fundamental Knowled ension or Analysis	tion: s available) te changes or a go less rigorous r very question) dge <u>1-B</u>	ittach parent) review by the

ES-401 Writ	ten Examination (	Question Worksheet	For	rm-401-5
Examination Outline Co	ross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 022.A 3.3	SRO A1.04
Proposed Question:	RO# 5, SEE	ATTACHED		
Proposed Answer:	A			
Explanation (Optional):	SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previousl provided)	1C04 1C 1-8 CVCS P&II y	8, 1C03 1D 2-1 Alarm R O sh 2.	esponse Proc	edures,
Proposed references to	be provided to ap	plicants during examinat	ion:	
Learning Objective:	PB-ILT-055-02	27S/001 (A	s available)	
Ouestion Source:	Bank # Modified Bank New	INPO 27539 (Not	e changes or a	ttach parent)
Question History:	Last NRC Exan	Bank: INPO 2753	9 Prairie Isla	nd 2004
(Optional - Questions valida NRC; failure to provide the	ted at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	review by the
Question Cognitive Lev	vel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge	_
10 CFR Part 55 Conten	t: 55.41	X		
K/A Statement: Ability	to operate and/or m lemand controller a	onitor the following as the	y apply to the I	Loss of Reactor

ES-401 W1	ritten Examination (	Question Worksheet	For	m-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 025.A 3.6	SRO 
Proposed Question:	RO# 6, SEE	ATTACHED		
Proposed Answer:	D			
Explanation (Optiona	l): SEE ATTAC	CHED		
Technical Reference( (Attach if not previou provided)	s): sly SEP 2.1 Shu steps 18 and	n P&ID 110E029 SH. 1, em P&ID 685J175 Sh. 2 atdown LOCA with RH	, R aligned for	LHSI BG
Proposed references t	o be provided to ap	plicants during examinat	ion:	
Learning Objective	L P0069/002	(A	s available)	
Learning Objective.	L1 0007/002			
Ouestion Source:	Bank # Modified Bank New	(Note 	e changes or a	ttach parent)
Ouestion Source: Question History:	Bank # Modified Bank New Last NRC Exan	(Note NEW Bank: NEW	e changes or a	ttach parent)
Ouestion Source: Question History: (Optional - Questions vali NRC; failure to provide th	Bank # Modified Bank New Last NRC Exan dated at the facility sind ie information will nece	(Note <u>NEW</u> a <u>Bank: NEW</u> ce 10/95 will generally undergressitate a detailed review of even	e changes or a go less rigorous r very question)	ttach parent)
Ouestion Source: Question History: (Optional - Questions vali NRC; failure to provide the Question Cognitive L	Bank # Modified Bank New Last NRC Exan dated at the facility sind he information will nece evel: Memory of Comprehe	(Note <u>NEW</u> a <u>Bank: NEW</u> ce 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowled ension or Analysis	e changes or a go less rigorous r yery question) ge 2-RI	ttach parent) eview by the
Ouestion Source: Question History: (Optional - Questions vali NRC; failure to provide the Question Cognitive Le 10 CFR Part 55 Conte	Bank # Modified Bank New Last NRC Exan dated at the facility sind information will nece evel: Memory of Comprehe ent: 55.41	(Note <u>NEW</u> <b>Bank: NEW</b> ce 10/95 will generally undergessitate a detailed review of even or Fundamental Knowled ension or Analysis	e changes or a go less rigorous r very question) ge <u>2-RI</u>	ttach parent) eview by the -

K/A Statement: Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System: Increasing reactor building sump level

ES-401	Written Examination (	Question Worksheet	Form	-401-5
Examination Outlir	ne Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 026.2.1 4.6	SRO .31
Proposed Question:	RO# 7, SEE	ATTACHED		
Proposed Answer: Explanation (Optio	C SEE ATTAC	CHED		
Technical Reference (Attach if not previ provided)	s to be provided to ap	nlicants during examinat	tion:	
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective	s to be provided to ap	plicants during examinat	tion:	
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Question Source:	s to be provided to ap : <u>LP0084/004</u> Bank # Modified Bank New	plicants during examinat (A PBNP BANK (Not	tion: .s available) e changes or atta	ach parent)
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Ouestion Source: Question History:	s to be provided to ap : <u>LP0084/004</u> Bank # Modified Bank New Last NRC Exam	plicants during examinat (A PBNP BANK PBNP BANK (Not Bank: PBNP LOR	tion: .s available) e changes or atta <b>t Bank</b>	ach parent)
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Question Source: Question History: (Optional - Questions v NRC; failure to provide	s to be provided to ap : <u>LP0084/004</u> Bank # Modified Bank New Last NRC Example validated at the facility since	plicants during examinat (A PBNP BANK (Not m Bank: PBNP LOR ce 10/95 will generally under essitate a detailed review of e	tion: s available) e changes or atta <b>t Bank</b> go less rigorous rev very question)	ach parent)
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Ouestion Source: Question History: (Optional - Questions v NRC; failure to provide Question Cognitive	s to be provided to ap LP0084/004 Bank # Modified Bank New Last NRC Exant validated at the facility since the information will nece Level: Memory of Comprehe	plicants during examinat plicants during examinat (A PBNP BANK (Not <b>Bank: PBNP LOR</b> ce 10/95 will generally under cessitate a detailed review of e or Fundamental Knowled ension or Analysis	tion: s available) e changes or atta <b>2 Bank</b> go less rigorous rev very question) lge <u>3-PEO</u>	ach parent)
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Question Source: Question History: (Optional - Questions v NRC; failure to provide Question Cognitive	s to be provided to ap s to be provided to ap : <u>LP0084/004</u> Bank # Modified Bank New Last NRC Exan ralidated at the facility since the information will nece Level: Memory of Comprehe- ntent: 55.41	plicants during examinat plicants during examinat (A PBNP BANK (Not Bank: PBNP LOR (Not Bank: PBNP LOR ce 10/95 will generally under essitate a detailed review of e or Fundamental Knowled ension or Analysis X	tion: s available) e changes or atta <b>2 Bank</b> go less rigorous rev very question) lge <u>3-PEO</u>	ach parent)

K/A Statement: Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup. (Component Cooling Water)

ES-401 Wri	tten Examination (	Question Worksheet	For	rm-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 027.A 3.1	SRO <b>K1.01</b>
Proposed Question:	RO# 8, SEE	ATTACHED		
Proposed Answer:	A			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): Pressurizer Sly	logic sheet		
Proposed references to	be provided to ap	plicants during examinat	ion:	
Learning Objective:	N-RO-01-L002	<b>AI/005</b> (A	s available)	
Question Source:	Bank #	PBNP EXAM BANI	K	
	Modified Bank New	(Not	e changes or a	ttach parent)
Question History:	Last NRC Exan	a Bank: Point Beach	n 2003	
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	review by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge	_
10 CFR Part 55 Conte	nt: 55.41	X		
K/A Statement: Knowl	edge of the operation	nal implications of the follo	owing concepts	as they apply to

K/A Statement: Knowledge of the operational implications of the following concepts as they apply the Pressurizer Pressure Control Malfunctions: Definitions of saturation temperature

	Written Examination	Question Worksheet	Form-401-5
Examination Outli	ine Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO SRO 1 1 029.EK2.06 2.9
Proposed Question	n: RO# 9, SEE	E ATTACHED	
Proposed Answer:	<u> </u>		
Explanation (Opti	onal): SEE ATTA	CHED	
Technical Referen (Attach if not prev provided)	EOP-0 Rea nce(s): background	ctor Trip or Safety Injec d	tion step 1 RNO and
		<b></b>	on.
Proposed referenc	es to be provided to a	pplicants during examinat	
Proposed reference Learning Objectiv	tes to be provided to apres to be provided to apres $\frac{\mathbf{LP0405}}{006}$	pplicants during examinat:	s available)
Proposed reference Learning Objectiv Ouestion Source:	res to be provided to aj re: <u>LP0405/006</u> Bank # Modified Bank New	(A: INPO 22394 (Note	s available) e changes or attach paren
Proposed reference Learning Objective Ouestion Source: Question History:	res to be provided to aj re: <u>LP0405/006</u> Bank # Modified Bank New Last NRC Exa	m _Bank: INPO 22394	s available) changes or attach paren <b>Diablo Canyon 2002</b>
Proposed reference Learning Objective Ouestion Source: Question History: (Optional - Questions NRC; failure to provide	tes to be provided to a re: <u>LP0405/006</u> Bank # Modified Bank New Last NRC Exa validated at the facility sin de the information will neo	<pre>pplicants during examinat:</pre>	s available) c changes or attach paren <b>Diablo Canyon 2002</b> to less rigorous review by the ery question)
Proposed reference Learning Objective Ouestion Source: Question History: (Optional - Questions NRC; failure to provide Question Cognitive	res to be provided to aj re: <u>LP0405/006</u> Bank # Modified Bank New Last NRC Exa validated at the facility sin de the information will neo re Level: Memory Compreh	pplicants during examination (Astronomy of the second seco	s available) c changes or attach paren <b>Diablo Canyon 2002</b> to less rigorous review by the ery question) ge <u>1-P</u>

	Written Examination	Question Worksheet	For	m-401-5
Examination Outlin	e Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 038.EI 4.1	SRO  K3.08
Proposed Question:	RO# 10, SEI	EATTACHED		
Proposed Answer:	D			
Explanation (Option	nal): SEE ATTAC	CHED		
Technical Referenc (Attach if not previ- provided)	EOP-3 Stear e(s): note ously	m Generator Tube R	upture step 1 ar	nd step 11
Proposed references	s to be provided to ap	plicants during examin	ation:	
Proposed references Learning Objective	s to be provided to ap : <u>LP1829/001</u>	plicants during examin	ation:(As available)	
Proposed references Learning Objective Ouestion Source:	s to be provided to ap : <u>LP1829/001</u> Bank # Modified Bank New	plicants during examin ( (N NEW	ation: (As available) ote changes or a	ttach parent)
Proposed reference: Learning Objective Ouestion Source: Question History:	s to be provided to ap : <u>LP1829/001</u> Bank # Modified Bank New Last NRC Exar	plicants during examin ( (N <u>NEW</u> (N <u>Bank: NEW</u>	ation:(As available) ote changes or a	ttach parent)
Proposed reference: Learning Objective Ouestion Source: Question History: (Optional - Questions v NRC; failure to provide	s to be provided to ap : <u>LP1829/001</u> Bank # Modified Bank New Last NRC Exan alidated at the facility sin the information will nece	plicants during examin (N <u>NEW</u> n <u>Bank: NEW</u> ce 10/95 will generally und essitate a detailed review of	As available) (As available) ote changes or a ergo less rigorous r	ttach parent)
Proposed reference: Learning Objective Ouestion Source: Question History: (Optional - Questions v NRC; failure to provide Question Cognitive	s to be provided to ap : <u>LP1829/001</u> Bank # Modified Bank New Last NRC Exan alidated at the facility sin the information will neco Level: Memory of Comprehe	plicants during examin (N NEW NEW Bank: NEW ce 10/95 will generally und essitate a detailed review of or Fundamental Knowl ension or Analysis	ation: (As available) ote changes or a ergo less rigorous r every question) edge <u>1-P</u>	ttach parent) eview by the

ES-401 Wri	tten Examination (	Question Worksheet	Form-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       1
Proposed Question:	RO# 11, SEE	E ATTACHED	
Proposed Answer:	D		
Explanation (Optional)	): SEE ATTAC	CHED	
Technical Reference(s) (Attach if not previous provided)	): ARP 1C04 1 ly IT-08A Cold	C 4-8 Alarm Respons I Start test 1P-29 Quar	e Procedure for 1TR2000 rterly Attachment E
Learning Objective:			tion:
Question Source:	Bank # Modified Bank New	(F	te changes or attach parent)
Question History:	Last NRC Exan	<b>Bank: NEW</b>	
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous review by the very question)
Question Cognitive Le	evel: Memory of Comprehe	or Fundamental Knowle ension or Analysis	lge <u>1-P</u>
10 CFR Part 55 Conter	nt: 55.41	X	
V/A Statement: Ability	$\frac{33.43}{}$	wonitor the following as the	w opply to the Loss of Main

K/A Statement: Ability to operate and/or monitor the following as they apply to the Loss of Main Feedwater (MFW): AFW auxiliaries, including oil cooling water supply

ES-401 Wr	itten Examination	Question Worksheet	For	rm-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 056.A 4.1	SRO .A2.34
Proposed Question:	RO# 12, SEI	E ATTACHED		
Proposed Answer:	C			
Explanation (Optional	I): SEE ATTAC	CHED		
Technical Reference	S): Safeguards	a Book 3.2.11 for bus 1 Bus Restoration BG ste	Y06, AOP 19 p 5.	A Train A
(Attach if not previous provided)	sly			
(Attach if not previous provided) Proposed references to Learning Objective:	be provided to ap	plicants during examinat	ion:	
(Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source:	be provided to ap <b>LP0576/003</b> Bank # Modified Bank New	plicants during examinat (A (Note NEW	ion: s available) e changes or a	nttach parent)
(Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History:	be provided to ap LP0576/003 Bank # Modified Bank New Last NRC Exar	plicants during examinat (A (Note NEW n Bank: NEW	ion: s available) e changes or a	nttach parent)
<ul> <li>(Attach if not previous provided)</li> <li>Proposed references to Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions value NRC; failure to provide the</li> </ul>	b be provided to ap <b>LP0576/003</b> Bank # Modified Bank New Last NRC Exar dated at the facility sin e information will neco	plicants during examinat (A (Note <u>NEW</u> n <u>Bank: NEW</u> ce 10/95 will generally underg essitate a detailed review of ev	ion: s available) e changes or a go less rigorous very question)	nttach parent) review by the
<ul> <li>(Attach if not previous provided)</li> <li>Proposed references to Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valie NRC; failure to provide th</li> <li>Question Cognitive Log</li> </ul>	b be provided to ap <b>LP0576/003</b> Bank # Modified Bank New Last NRC Exar dated at the facility sin e information will nece evel: Memory of Comprehe	plicants during examinat (A (Note NEW n <u>Bank: NEW</u> ce 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowled ension or Analysis	ion: s available) e changes or a go less rigorous very question) lge	nttach parent, review by the
<ul> <li>(Attach if not previous provided)</li> <li>Proposed references to Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valie)</li> <li>NRC; failure to provide the Question Cognitive Learning Cognitive Learning</li> </ul>	be provided to ap <b>LP0576/003</b> Bank # Modified Bank New Last NRC Exandated at the facility sin e information will neco evel: Memory of Comprehe- ent: 55.41	plicants during examinat (A (Note NEW M Bank: NEW Ce 10/95 will generally undergessitate a detailed review of eventsor Fundamental Knowled ension or Analysis	ion: s available) e changes or a go less rigorous very question) lge <u>2-RI</u>	nttach parent) review by the

ES-401	Written Examination	Form-401-5	
Examination Outlir	e Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       1
Proposed Question	RO# 13, SEI	E ATTACHED	
Proposed Answer: Explanation (Optio Technical Reference (Attach if not previ	D SEE ATTAC e(s): TS 3.8.7 Inv	CHED verters, TS 3.8.9 Distrik	oution System - Operating
provided) Proposed reference	s to be provided to ap	plicants during examina	tion:
Learning Objective	: LP3344/002	(A	As available)
Ouestion Source:	Bank # Modified Bank New	(Not	te changes or attach parent)
Question History:	Last NRC Exar	m Bank: NEW	
(Optional - Questions v NRC; failure to provide	ralidated at the facility sin the information will nec	ce 10/95 will generally under essitate a detailed review of e	go less rigorous review by the every question)
Question Cognitive	Level: Memory of Comprehe	or Fundamental Knowle ension or Analysis	dge <b>2-DR</b>
10 CFR Part 55 Co	ntent: 55.41 _ 55.43 _	x x	

K/A Statement: Ability to recognize system parameters that are entry-level conditions for Technical Specifications. (Loss of Vital AC Electrical Instrument Bus)

ES-401 Wr	S-401 Written Examination Question Worksheet		Fo	rm-401-5
Examination Outline O	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 065.A 3.7	SRO .K3.08
Proposed Question:	RO# 14, SEF	E ATTACHED		
Proposed Answer:	B			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	EOP 1 Loss bases. sly	of Reactor or Seconda	ry Coolant S	tep 10 and its
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	LP0405/005	(A	As available)	
Ouestion Source:	Bank # Modified Bank New	(Not	te changes or a	attach parent)
Question History:	Last NRC Exan	<b>Bank: NEW</b>		_
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	rgo less rigorous every question)	review by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	dge	_
10 CFR Part 55 Conte	nt: 55.4155.43	X		
K/A Statement: Know Instrument Air: Actions	ledge of the reasons to contained in EOP for	for the following response r loss of instrument air	s as they apply	to the Loss of

ES-401 V	Written Examination Question Worksheet			n-401-5
Examination Outline	e Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 W/E04.J 3.8	SRO  E <b>K2.2</b>
Proposed Question:	RO# 15, SEE	E ATTACHED		
Proposed Answer: Explanation (Option Technical Reference (Attach if not previo provided)	B SEE ATTAC e(s): ECA 1.2 LO ously	CHED OCA Outside Containm	ent bases Step	4 and 5.
Proposed references	to be provided to app	plicants during examinat	tion:	
Learning Objective:	LP0465/004	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	INPO 26848 (Not	e changes or att	tach parent)
Question History:	Last NRC Exam	1 Bank: INPO 2084	8 Kewaunee 20	104
(Optional - Questions va NRC; failure to provide	alidated at the facility sind the information will nece	the 10/95 will generally under essitate a detailed review of e	go less rigorous re very question)	view by the
Question Cognitive	Level: Memory o Comprehe	r Fundamental Knowled ension or Analysis	lge <u>1-B</u>	
10 CFR Part 55 Cor	tent: 55.41	X		

K/A Statement: Knowledge of the interrelations between the LOCA Outside Containment and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

ES-401 Writ	tten Examination	Question Worksheet	Fo	rm-401-5
Examination Outline C	ross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 W/E11 3.6	SRO .EK1.2
Proposed Question:	RO# 16, SEI	E ATTACHED		
Proposed Answer: Explanation (Optional)	C SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous) provided) Proposed references to	EOP 1 Loss ECA 1.1 Los conditions, <i>A</i> ly be provided to ap	of Reactor or Secondar ss of Containment Sum AV123 Electrical Syster plicants during examinat	ry Coolant St p Recirculat n Diagram	ep 18 ion entry
Learning Objective:	LP0465/001	(A	s available)	
Question Source:	Bank # Modified Bank New	INPO 26523 (Note	e changes or a	attach parent)
Question History:	Last NRC Exan	m Bank: INPO 26523	3 Farley 2003	3
(Optional - Questions valida NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally undergessitate a detailed review of ev	go less rigorous very question)	review by the
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	ge	
10 CFR Part 55 Conter	nt: 55.41	X		
K/A Statement: Knowle the Loss of Emergency C associated with Loss of E	edge of the operatio Coolant Recirculatio Emergency Coolant	nal implications of the follo n: Normal, abnormal and e Recirculation.	owing concepts mergency oper	s as they apply ating procedu

ES-401 Written	S-401 Written Examination Question Worksheet		Form-401-5	
Examination Outline Cross	-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 W/E05I 3.7	SRO  EA1.2
Proposed Question:	RO# 17, SEI	E ATTACHED		
Proposed Answer: Explanation (Optional):	A SEE ATTAC	CHED		
Technical Reference(s): (Attach if not previously provided)	CSP H.1 Re	sponse to Loss of Heat	Sink step 2 BC	Ţ
Proposed references to be p	provided to ap	plicants during examinat	tion:	
Learning Objective: L	P1998/001	(A	s available)	
Ouestion Source: B N N	ank # lodified Bank ew	PBNP BANK (Not	e changes or at	tach parent)
Question History: L	ast NRC Exan	n Bank: PBNP LOR	R BANK	
(Optional - Questions validated a NRC; failure to provide the info	at the facility sind rmation will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous re very question)	view by the
Question Cognitive Level:	Memory of Comprehe	or Fundamental Knowled ension or Analysis	lge	
10 CFR Part 55 Content:	55.41 55.43	<u>x</u>		
K/A Statement: Ability to o Secondary Heat Sink: Operat	perate and/or ming behavior ch	nonitor the following as the aracteristics of the facility.	ey apply to the Lo	oss of

ES-401 Wri	tten Examination (	Question Worksheet	Fo	rm-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 1 077.2 3.6	SRO 
Proposed Question:	RO# 18, SEE	E ATTACHED		
Proposed Answer:	B			
Explanation (Optional)	): SEE ATTAC	THED		
	OP 2A Norn 383 OP 10	nal Power Operations 1 2 Startup to Power Ope	P&L for negation Unit 1	ative VARS l steps
Technical Reference(s) (Attach if not previous provided)	): <u>5.82-5.88</u> ily			-
Technical Reference(s) (Attach if not previous provided) Proposed references to	): <u>5.82-5.88</u> Hy	plicants during examina	tion:	
Technical Reference(s) (Attach if not previous provided) Proposed references to Learning Objective:	be provided to app LP2440/014	plicants during examina	tion:	
Technical Reference(s) (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source:	): <u>5.82-5.88</u> be provided to app <u>LP2440/014</u> Bank # Modified Bank New	plicants during examina (A <u>NEW</u> (Not	tion: s available)	attach parent)
Technical Reference(s) (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History:	be provided to app LP2440/014 Bank # Modified Bank New Last NRC Exan	plicants during examina (A 	tion: s available) e changes or a	attach parent)
Technical Reference(s) (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the	be provided to app <u>LP2440/014</u> Bank # Modified Bank New Last NRC Exan lated at the facility since e information will nece	plicants during examina (A <u>NEW</u> (Not <u>NEW</u> <u>Bank: NEW</u> ce 10/95 will generally under essitate a detailed review of e	tion: s available) e changes or a go less rigorous very question)	attach parent)
Technical Reference(s) (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le	be provided to app <b>LP2440/014</b> Bank # Modified Bank New Last NRC Exan lated at the facility sind e information will nece evel: Memory of Comprehe	plicants during examina (A <u>NEW</u> (Not <u>NEW</u> (Not <u>NEW</u> (Not <u>NEW</u> (Not <u>NEW</u> (Not <u>NEW</u> (Not <u>NEW</u> (Not <u>NEW</u> ) (Not <u>NEW</u> ) (Not (Not <u>NEW</u> ) (Not (Not (Not (Not) (Not (Not)(N)) (Not (Not)(N)) (Not)(N)) (Not)(N) (N) (N) (N) (N) (N) (N) (N) (N) (N)	tion: ts available) te changes or a transformed solution transformed solution trans	attach parent) review by the
Technical Reference(s) (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le 10 CFR Part 55 Conter	): 5.82-5.88 ely be provided to app <u>LP2440/014</u> Bank # Modified Bank New Last NRC Exan lated at the facility since evel: Memory of Comprehe nt: 55.41	plicants during examina (A (Not NEW <b>Bank: NEW</b> (Not <b>NEW</b> (Not <b>NEW</b> (Not <b>NEW</b> (Not <b>NEW</b> (Not <b>NEW</b> (Not <b>NEW</b> (Not <b>NEW</b> ) (Not <b>NEW</b> (Not <b>NEW</b> ) (Not <b>NEW</b> )	tion: s available) te changes or a go less rigorous very question) dge	attach parent, review by the

and Electric Grid Disturbances: VARs outside the capability curve.

ES-401 Wri	tten Examination (	Question Worksheet	Form-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       1
Proposed Question:	RO# 19, SEI	E ATTACHED	
Proposed Answer:	D		
Explanation (Optional)	): SEE ATTAC	CHED	
Technical Reference(s) (Attach if not previous provided)	): Lesson Plan ly	N-RO-01-L034I Powe	er Defect
Proposed references to	be provided to ap	plicants during examina	tion:
Learning Objective:	N-RO-01-L034	<b>I/010</b> (A	As available)
Ouestion Source:	Bank # Modified Bank New	(No	te changes or attach parent)
Question History:	Last NRC Exan	n Bank: NEW	
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally unde essitate a detailed review of e	rgo less rigorous review by the every question)
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowle ension or Analysis	dge <u>1-F</u>
10 CFR Part 55 Conten	nt: 55.41	X	
K/A Statement: Know apply to Dropped Rod temperature defects	ledge of the operat Calculation of Po	ional implications of the ower Defect: algebraic s	e following concepts as they um of moderator and fuel

ES-401 Wr.	itten Examination (	Question Worksheet	For	rm-401-5
Examination Outline (	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 2 024.4 2.7	SRO 
Proposed Question:	RO# 20, SEE	E ATTACHED		
Proposed Answer: Explanation (Optional	B SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided) Proposed references to	CSP-S.1 Res 5B Blender ( S): SH.2 Sly	sponse to Nuclear Powe Operation/Boration/Dil	r Generation ution, WEST	h/ATWS, ΟΙ Γ 684J741
Learning Objective:	LP0082/005	(A:	s available)	
Question Source:	Bank # Modified Bank New	<u>INPO 19244</u> (Note	e changes or a	attach parent
Question History:	Last NRC Exan	Bank: INPO 19244	Braidwood	2000
(Optional - Questions valid NRC; failure to provide the	dated at the facility sind e information will nece	the 10/95 will generally undergessitate a detailed review of ev	go less rigorous very question)	review by the
Question Cognitive Le	evel: Memory o Comprehe	r Fundamental Knowled nsion or Analysis	ge <u>1-S</u>	_
10 CFR Part 55 Conte	nt: 55.41	X		
	55.43			

ES-401 Writ	ten Examination (	Question Worksheet	For	m-401-5
Examination Outline C	ross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 2 033.A 3.2	SRO K3.1
Proposed Question:	RO# 21, SEE	E ATTACHED		
Proposed Answer:	A			
Explanation (Optional):	SEE ATTAC	CHED		
Technical Reference(s)	TS 3.3.1 RP Reactor Star	S Instrumentation and rtup page 24 caution to	associated Ba maintain <p< td=""><td>ases, OP 1B 6</td></p<>	ases, OP 1B 6
(Attach if not previousl provided) Proposed references to	y be provided to ap	plicants during examinat	ion:	
<ul><li>(Attach if not previousl provided)</li><li>Proposed references to Learning Objective:</li></ul>	y be provided to ap <b>LP0183/010</b>	plicants during examinat	ion:s available)	
<ul><li>(Attach if not previousl provided)</li><li>Proposed references to Learning Objective:</li><li>Ouestion Source:</li></ul>	y be provided to ap <u>LP0183/010</u> Bank # Modified Bank New	plicants during examinat (A <u>INPO 22950</u> (Not	ion: s available) e changes or a	ttach parent)
<ul> <li>(Attach if not previousl provided)</li> <li>Proposed references to</li> <li>Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> </ul>	y be provided to ap <u><b>LP0183/010</b></u> Bank # Modified Bank New Last NRC Exan	plicants during examinat (A <u>INPO 22950</u> (Not n <u>Bank: INPO 22950</u>	ion: s available) e changes or a <b>0 Prairie Isla</b> i	ttach parent) nd 2002
<ul> <li>(Attach if not previousl provided)</li> <li>Proposed references to</li> <li>Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions validation NRC; failure to provide the</li> </ul>	y be provided to ap <u><b>LP0183/010</b></u> Bank # Modified Bank New Last NRC Exan tted at the facility sind	plicants during examinat (A <u>INPO 22950</u> (Not <u>Bank: INPO 22950</u> (Not n <u>Bank: INPO 22950</u> ce 10/95 will generally undergessitate a detailed review of even	ion: s available) e changes or a <b>0 Prairie Islan</b> go less rigorous r very question)	ttach parent) nd 2002 eview by the
<ul> <li>(Attach if not previousl provided)</li> <li>Proposed references to</li> <li>Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valida NRC; failure to provide the</li> <li>Question Cognitive Levent</li> </ul>	y be provided to ap <u><b>LP0183/010</b></u> Bank # Modified Bank New Last NRC Exan ted at the facility sind information will nece vel: Memory of Comprehe	plicants during examinat (A INPO 22950 (Note an Bank: INPO 22950 Ce 10/95 will generally undergessitate a detailed review of even for Fundamental Knowled ension or Analysis	ion: s available) e changes or a 0 Prairie Islar go less rigorous r very question) lge lge	ttach parent) nd 2002 eview by the
<ul> <li>(Attach if not previousl provided)</li> <li>Proposed references to</li> <li>Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valida NRC; failure to provide the</li> <li>Question Cognitive Levents</li> <li>10 CFR Part 55 Contements</li> </ul>	y be provided to ap <u><b>LP0183/010</b></u> Bank # Modified Bank New Last NRC Exan ted at the facility sind information will nece vel: Memory of Comprehe t: 55.41	plicants during examinat (A INPO 22950 (Note an Bank: INPO 22950 (Note an Bank: INPO 22950 (Note an Description of the second se	ion: s available) e changes or a 0 Prairie Islar go less rigorous r very question) lge <u>1-B</u>	ttach parent) nd 2002 eview by the

K/A Statement: Knowledge of the reasons for the following responses as they apply to the Loss of Intermediate Range Nuclear Instrumentation: Termination of startup following loss of intermediate range instrumenation

	Writte	en Examination Q	Question Worksheet	For	m-401-5
Examination O	utline Cro	oss-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 2 061.A 3.6	SRO 
Proposed Quest	tion:	RO# 22, SEE	ATTACHED		
Proposed Answ	ver:	D			
Explanation (O	ptional):	SEE ATTAC	HED		
(Attach if not p provided) Proposed refere	reviously ences to b	be provided to app	blicants during examinat	ion:	
Learning Objec	ctive:	LP0359/004	(A	s available)	
Question Source	e:	Bank # Modified Bank	PBNP BANK	_	
		New	(1001	e changes or a	ttach parent
Question Histor	ry:	New Last NRC Exam	Bank: PBNP Seco	e changes or a ndaries Exam	ttach parentj 1 Bank
Question Histor (Optional - Question NRC; failure to pro-	ry: ons validate ovide the in	New Last NRC Exam ed at the facility sinc formation will neces	e 10/95 will generally under ssitate a detailed review of e	e changes or a ndaries Exam go less rigorous r very question)	ttach parent) <b>Bank</b> eview by the
Question Histor (Optional - Question NRC; failure to pro Question Cogni	ry: ons validate ovide the in itive Leve	New Last NRC Exam ed at the facility sinc aformation will neces el: Memory of Comprehen	e 10/95 will generally under ssitate a detailed review of e r Fundamental Knowled	e changes or a ndaries Exam go less rigorous r very question) lge <u>1-I</u>	ttach parent) <b>Bank</b> eview by the -

ES-401 Wri	Written Examination Question Worksheet		For	Form-401-5	
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 2 068.A 3.3	SRO  K2.07	
Proposed Question:	RO# 23, SEI	E ATTACHED			
Proposed Answer:	B				
Explanation (Optional)	): SEE ATTAC	CHED			
Technical Reference(s) (Attach if not previous provided)	AOP-10A Sa D: <u>Electrical Sy</u> ly	afe Shutdown - Local ( ystem Diagram.	Control step 3	9, AV123	
Proposed references to	be provided to ap	plicants during examina	tion:		
Ouestion Source:	LP1275/004 Bank # Modified Bank New	(A	te changes or a	ttach parent)	
Question History:	Last NRC Exan	<b>Bank: NEW</b>			
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous revery question)	eview by the	
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	dge <b>2-DR</b>	-	
10 CFR Part 55 Conter	nt: 55.41	X			
K/A Statement: Knowle following: ED/G	edge of the interrela	tions between the Control	Room Evacuati	on and the	

ES-401 Wr	S-401 Written Examination Question Worksheet		Form-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       1
Proposed Question:	RO# 24, SEE	E ATTACHED	
Proposed Answer: Explanation (Optional	C SEE ATTAC	CHED	
Technical Reference(s (Attach if not previou provided)	Setpoint Does S): <u>Rod</u> Sly	cument 6.1, AOP 6B S	tuck or Misaligned Control
Proposed references to	b be provided to ap	plicants during examina	tion:
Learning Objective:	LP0576/005	(A	as available)
Ouestion Source:	Bank # Modified Bank New	PBNP EXAM BAN (Not	<b>K</b> te changes or attach parent)
Question History:	Last NRC Exan	<b>Bank: Point Beac</b>	h 2005
(Optional - Questions valions valion) NRC; failure to provide the	dated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous review by the every question)
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	dge
10 CFR Part 55 Conte	ent: 55.4155.43	X	
K/A Statement: Know Inoperable/Stuck Contro	ledge of the reasons to ledge	for the following response limits	s as they apply to the

ES-401 Writt	en Examination (	Question Worksheet	Form-40	1-5
Examination Outline Cr	oss-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 2 076.AA1.04 3.2	SRO
Proposed Question:	RO# 25, SEE	E ATTACHED		
Proposed Answer:	A			
Explanation (Optional):	SEE ATTAC	CHED		
Technical Reference(s): (Attach if not previously provided)	Lesson Plan	0486 ESFAS, Cont Isol	Logic sheet 21	
Proposed references to l	be provided to ap	plicants during examinati	on:	
Learning Objective:	LP0486/001	(As	available)	
<b>Question Source:</b>	Bank #	PBNP EXAM BANK	- -	
	Modified Bank New	(Note	changes or attach	parent)
Question History:	Last NRC Exan	n Bank: Point Beach	2003	
(Optional - Questions valida NRC; failure to provide the i	ted at the facility sind information will nece	ce 10/95 will generally underg essitate a detailed review of ev	o less rigorous review ery question)	by the
Question Cognitive Lev	el: Memory o Comprehe	or Fundamental Knowleds	2-RI	
10 CFR Part 55 Content	:: 55.41	X		
	55.43			
K/A Statement: Ability t	o operate and/or m	onitor the following as they	apply to the High R	eactor

Coolant Activity: Failed fuel-monitoring equipment

ES-401	Written Examination	Question Worksheet	Form-401-5
Examination Out	line Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       1
Proposed Questic	on: RO# 26, SE	EE ATTACHED	
Proposed Answer Explanation (Opt	:: <u>C</u> ional): SEE ATTA	CHED	
Technical Refere (Attach if not pre provided)	nce(s): EOP 0.2 N viously	atural Circulation Cool	down steps 5-9
Proposed referen	ces to be provided to a	pplicants during examina	tion:
Learning Objecti	ve: LP0407/003	(A	as available)
Ouestion Source:	Bank # Modified Ban New	k (No 	te changes or attach parent)
Question History	Last NRC Exa	m Bank: NEW	
(Optional - Question NRC; failure to prov	s validated at the facility si ide the information will ne	nce 10/95 will generally under cessitate a detailed review of e	rgo less rigorous review by the every question)
Question Cogniti	ve Level: Memory Comprel	or Fundamental Knowle nension or Analysis	dge <b>2-DR</b>
10 CFR Part 55 0	Content: 55.41 55.43	x	

K/A Statement: Ability to determine and interpret the following as they apply to the Natural Circulation Operations: Adherence to appropriate procedures and operation within the limitations in the facilities license and amendments.

ES-401	Written Examination (	Question Worksheet	Form	m-401-5
Examination Outlin	e Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 1 2 W/E08. 3.2	SRO 2.2.25
Proposed Question:	RO# 27, SEE	EATTACHED		
Proposed Answer:	<u> </u>			
Explanation (Option	nal): SEE ATTAC	CHED		
Tashnisal Deference	e(s)· <b>OP-3C Hot</b>	Standby to Cold Shutdo	own P&L 3.6	
(Attach if not previ- provided)	ously			
(Attach if not previe provided) Proposed references	s to be provided to ap	plicants during examinati	ion:	
(Attach if not previ provided) Proposed references Learning Objective	s to be provided to ap	plicants during examinati	ion: s available)	
<ul><li>Attach if not previ provided)</li><li>Proposed reference</li><li>Learning Objective</li><li>Ouestion Source:</li></ul>	s to be provided to ap : <u>LP0272/001 an</u> Bank # Modified Bank New	plicants during examinati <u>d 008</u> (As <u>(Note</u> <u>NEW</u>	ion: s available) e changes or at	tach parent)
<ul><li>Attach if not previ provided)</li><li>Proposed reference</li><li>Learning Objective</li><li>Ouestion Source:</li><li>Question History:</li></ul>	s to be provided to ap : <u>LP0272/001 an</u> Bank # Modified Bank New Last NRC Exan	plicants during examinati d 008 (As (Note NEW n Bank: NEW	ion: s available) e changes or at	tach parent)
<ul> <li>Proposed reference</li> <li>Learning Objective</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions v NRC; failure to provide</li> </ul>	s to be provided to app : <u>LP0272/001 an</u> Bank # Modified Bank New Last NRC Exan ralidated at the facility since the information will nece	plicants during examinati d 008 (As (Note NEW n Bank: NEW ce 10/95 will generally undergessitate a detailed review of ev	ion: s available) e changes or at go less rigorous re zery question)	tach parent)
<ul> <li>Proposed reference</li> <li>Learning Objective</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions v NRC; failure to provide</li> </ul>	s to be provided to app to be provided to app Example: LP0272/001 and Bank # Modified Bank New Last NRC Exam ralidated at the facility sind the information will nece Level: Memory of Comprehe	plicants during examinati d 008 (As (Note NEW <b>Bank: NEW</b> ce 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowled, ension or Analysis	ion: s available) e changes or at go less rigorous re very question) ge <u>1- P</u>	tach parent)
<ul> <li>Proposed reference</li> <li>Learning Objective</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions v NRC; failure to provide</li> <li>Question Cognitive</li> <li>10 CFR Part 55 Cont</li> </ul>	s to be provided to app to apply the provided to apply the provide	plicants during examination d 008 (As (Note NEW Bank: NEW Composition of events or Fundamental Knowled ension or Analysis x	ion: s available) e changes or at go less rigorous re very question) ge <u>1- P</u>	tach parent)

K/A Statement: Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits. {Pressurized Thermal Shock (PTS)}

ES-401	Written Examination	on Question Worksheet	Form-401-5
Examination Outl	ine Cross-reference:	Level Tier # Group # K/A #	RO     SRO       2
Proposed Question	n: RO# 28, 5	Importance Rating	
Proposed Answer Explanation (Opti	A SEE ATT	ACHED	
Technical Referer	ice(s): CVCS Pa	¢Ю	
provided) Proposed reference	es to be provided to	applicants during examina	tion:
Proposed reference Learning Objectiv	es to be provided to e: LP3718/001	applicants during examina	tion:
Proposed reference Learning Objective Ouestion Source:	res to be provided to re: <u>LP3718/001</u> Bank # Modified Ba New	applicants during examina (A nk (No (No 	tion: As available) te changes or attach parent)
Proposed reference Learning Objective Question Source:	es to be provided to re: <u>LP3718/001</u> Bank # Modified Ba New Last NRC E:	applicants during examina (A nk (No (No  NEW xam <b>Bank: NEW</b>	tion: As available) te changes or attach parent)
<ul> <li>Proposed reference</li> <li>Learning Objective</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions NRC; failure to provi</li> </ul>	res to be provided to re: <u>LP3718/001</u> Bank # Modified Ba New Last NRC E: validated at the facility de the information will p	applicants during examina (A nk (Nor NEW Kam Bank: NEW since 10/95 will generally under necessitate a detailed review of e	tion: As available) te changes or attach parent rgo less rigorous review by the every question)
<ul> <li>Proposed reference</li> <li>Learning Objective</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions NRC; failure to provi</li> <li>Question Cognitive</li> </ul>	res to be provided to re: <u>LP3718/001</u> Bank # Modified Ba New Last NRC E: validated at the facility de the information will p re Level: Memor Compr	applicants during examina (A nk (No NEW Kam Bank: NEW since 10/95 will generally under necessitate a detailed review of e	tion:As available) te changes or attach parent rgo less rigorous review by the every question) dge

ES-401 Writte	en Examination (	Question Worksheet	: I	Form-401-5
Examination Outline Cre	oss-reference:	Level Tier # Group # K/A #	$ \begin{array}{r}                                     $	SRO  4.A4.04
Proposed Question:	RO# 29, SEI	E ATTACHED	ng <u> </u>	
Proposed Answer:	D			
Explanation (Optional):	SEE ATTAC	CHED		
Technical Reference(s): (Attach if not previously provided) Proposed references to b	ROD 6.6 (G Blender 4.0	<b>iven),</b> ( <b>Given</b> ) plicants during	ROD 8	3.6 , ROD 6.6 ,
examination:			Blende	er 4.0
Question Source:	Bank # Modified Bank New	NEW	(As available)	) or attach parent)
Question History:	Last NRC Exam	m Bank: NEW		
(Optional - Questions validat NRC; failure to provide the in	ed at the facility sind	ce 10/95 will generally tessitate a detailed review	undergo less rigoro v of every question	us review by the )
Question Cognitive Leve	el: Memory o Comprehe	or Fundamental Kno ension or Analysis	wledge3-SI	PR
10 CFR Part 55 Content	: 55.41 _ 55.43	<u>x</u>		
K/A Statement: Ability to	o manually operate	e and/or monitor in the	e control room: C	alculation of bo

ES-401 W1	itten Examination (	Question Worksheet	Form	-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	$\begin{array}{r} \text{RO} \\ 2 \\ \hline 1 \\ \hline 005.2.4 \\ \hline 3.3 \end{array}$	SRO 
Proposed Question:	RO# 30, SEE	E ATTACHED		
Proposed Answer:	B			
Explanation (Optiona	l): SEE ATTAC	CHED		
Technical Reference	s): SEP 1 Degra	aded RHR System (	Capability step 14	background
(Attach if not previou provided)	sly			
Proposed references t	o be provided to ap	plicants during exam	ination:	
Learning Objective:	LP2189/009		(As available)	
Ouestion Source:	Bank # Modified Bank New	(1	Note changes or att	ach parent)
Question History:	Last NRC Exan	<b>Bank: NEW</b>		
(Optional - Questions vali NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally un essitate a detailed review	ndergo less rigorous rev of every question)	view by the
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knov ension or Analysis	vledge <u>1-B</u>	
10 CFR Part 55 Conte	ent: 55.41	X		
	55.43	X		
K/A Statement: Know	ledge of the specific	bases for EOP's (Resid	ual Heat Removal)	

ES-401 Wri	ES-401 Written Examination Question Worksheet			m-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 006.H 2.5	SRO  \$2.02
Proposed Question:	RO# 31, SEE	E ATTACHED		
Proposed Answer: Explanation (Optional	B SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): EOP 1 Loss	of Reactor or Seconda	ry Coolant St	ep 23
Proposed references to	be provided to app	plicants during examina	tion:	
Learning Objective:	LP0066/003	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	INPO 27711 (Not	te changes or a	ttach parent)
Question History:	Last NRC Exan	<b>Bank: INPO 2771</b>	1 DC Cook 20	004
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	eview by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	dge <b>2-RI</b>	-
10 CFR Part 55 Conte	nt: 55.4155.43	X		
K/A Statement: Knowl	edge of bus power s	upplies to the following: v	alve operators f	or accumulators

ES-401 Wr	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline (	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 007.H 3.0	SRO 
Proposed Question:	RO# 32, SEI	E ATTACHED		
Proposed Answer:	C	ЧЕD		
Explanation (Optional	): SEE ATTAC			
Technical Reference(s (Attach if not previous provided) Proposed references to	OP 4A Fillin 5.9.13 Sly	ng and Venting Reacto	r Coolant Syst	tem step
Learning Objective:	LP1296/0004	(A	As available)	
Ouestion Source:	Bank # Modified Bank New	(No	te changes or a	ttach parent)
Question History:	Last NRC Exan	<b>Bank: NEW</b>		
(Optional - Questions valid NRC; failure to provide the	dated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	rgo less rigorous r every question)	eview by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowle ension or Analysis	dge <u>1-I</u>	-
10 CFR Part 55 Conte	nt: 55.4155.43	<u>x</u>		
K/A Statement: Know Pressurizer Relief Tank	ledge of the physical System (PRTS) and	connections and/or cause the following systems: RC	-effect relationsh	nips between the

	ritten Examination (	Question Worksheet	Form-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       2     1       008.K3.01       3.4
Proposed Question:	RO# 33, SEI	E ATTACHED	
Proposed Answer:	A		
Explanation (Optiona	l): SEE ATTAC	CHED	
Technical Reference( (Attach if not previou provided)	s): AOP 5B Los sly	ss of Instrument Air Att	tachment H
Proposed references to	o be provided to ap	plicants during examinat	ion:
Proposed references to Learning Objective:	o be provided to ap 	plicants during examinat	ion: s available)
Proposed references t Learning Objective: Ouestion Source:	o be provided to ap LP0079/001 Bank # Modified Bank New	plicants during examinat (A: <u>INPO 23316</u> (Note	ion: s available) e changes or attach parent)
Proposed references t Learning Objective: Ouestion Source: Question History:	o be provided to ap LP0079/001 Bank # Modified Bank New Last NRC Exam	plicants during examinat (A: 	ion: s available) e changes or attach parent) <b>5 Indian Point 2003</b>
Proposed references t Learning Objective: Ouestion Source: Question History: (Optional - Questions vali NRC; failure to provide th	o be provided to ap LP0079/001 Bank # Modified Bank New Last NRC Exan dated at the facility since he information will nece	plicants during examinat (A: <u>INPO 23316</u> (Note n <u>Bank: INPO 23316</u> ce 10/95 will generally underg	ion: s available) e changes or attach parent) <u>6 Indian Point 2003</u> go less rigorous review by the very question)
Proposed references t Learning Objective: Ouestion Source: Question History: (Optional - Questions vali NRC; failure to provide th Question Cognitive L	o be provided to ap LP0079/001 Bank # Modified Bank New Last NRC Exan dated at the facility sind the information will neces evel: Memory of Comprehe	plicants during examinat (A: <u>INPO 23316</u> (Note a <u>Bank: INPO 23316</u> (Note a <u>Bank: INPO 23316</u> (Note a <u>Con</u> (Note a Con (Note a Con (Note a Con (Note a Con (Note a Con (Note a Con (Note a Con (Note a Con (Note a Con (Note a Con (Note (Note (Note (Note (Note (Note (Note (Note (Note))))))))))))))))))))))))))))))))))))	ion: s available) e changes or attach parent) <u>6 Indian Point 2003</u> go less rigorous review by the very question) ge

ES-401 Wr	itten Examination (	Question Worksheet	Form-401-5
Examination Outline (	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       2
Proposed Question:	RO# 34, SEI	E ATTACHED	
Proposed Answer:	A		
Explanation (Optional	): SEE ATTAC	CHED	
Technical Reference(s (Attach if not previous provided) Proposed references to	DBD 09 Rea s): <u>Systems</u> sly be provided to ap	nctor Coolant System, I	FSAR 7.7.3.1 Control
Learning Objective:	LP0078/0001		s available)
Ouestion Source:	Bank # Modified Bank New	INPO 26445 (Not	te changes or attach parent)
Question History:	Last NRC Exan	<b>Bank: INPO 2644</b>	5 Farley 2003
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous review by the very question)
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge <u>1-B</u>
10 CFR Part 55 Conte	nt: 55.4155.43	X	
K/A Statement: Know following: Spray valve	ledge of PZR PCS de warm-up	esign feature(s) and/or inte	rlock(s) which provide the

ES-401 Wr	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 012.H 3.3	SRO  \$5.01
Proposed Question:	RO# 35, SEE	E ATTACHED		
Proposed Answer:	A			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	TS 3.3.1 Inst           s):         System           sly	trumentation Bases, FS	SAR 7.2 React	tor Protection
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	LP0273/0007	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	INPO 22988 (Not	e changes or a	ttach parent)
Question History:	Last NRC Exan	<b>Bank: INPO 2298</b>	8 Prairie Isla	nd 2002
(Optional - Questions valid NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	review by the
Question Cognitive Lo	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge <b>1-B</b>	-
10 CFR Part 55 Conte	ont: 55.4155.43	X		
K/A Statement: Know the RPS: DNB	ledge of the operation	nal implications of the foll	owing concepts	as they apply to

ES-401 Wri	S-401 Written Examination Question Worksheet		Fo	rm-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 013.1 2.7	SRO  K6.01
Proposed Question:	RO# 36, SEE	E ATTACHED		
Proposed Answer:	B			
Explanation (Optional)	): SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous provided)	): Logic 883D1 ly	195-7		
Proposed references to	be provided to app	plicants during examinat	tion:	
Learning Objective:	LP0486/005	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	MODIFIED (N	ote changes o	r attach parent)
Question History:	Last NRC Exan	Bank: PBNP ILT	Bank MODI	FIED
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous very question)	review by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowlec ension or Analysis	lge	_
10 CFR Part 55 Conter	nt: 55.41	X		
K/A Statement: Knowle ESFAS: Sensors and Det	edge of the effect of tectors	a loss or malfunction on t	he following w	ill have on
ES-401 Written	n Examination (	Question Worksheet	Form	n-401-5
----------------------------------------------------------------------	-----------------------------------------------	------------------------------------------------------------------	---------------------------------------	---------------------
Examination Outline Cro	ss-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 013.A 3.6	SRO  1.06
Proposed Question:	RO# 37, SEE	E ATTACHED		
Proposed Answer:	<u> </u>			
Explanation (Optional):	SEE ATTAC	CHED		
Technical Reference(s): (Attach if not previously provided)	EOP 1.3 Con Injectionfold	ntainment Sump Recire dout page, step 31, step	culation - Low 34 and associa	Head ated Bases.
Proposed references to be	provided to ap	plicants during examinat	ion:	
Learning Objective:	LP0435/010	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	INPO 22968 (Not	e changes or at	tach parent)
Question History:	Last NRC Exan	m Bank: INPO 2296	8 Prairie Islan	d 2002
(Optional - Questions validated NRC; failure to provide the interval	d at the facility sind formation will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous re very question)	view by the
Question Cognitive Level	l: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge <b>1-P</b>	
10 CFR Part 55 Content:	55.41 55.43	<u>x</u>		
K/A Statement: Ability to limits) associated with oper	predict and/or mating the ESFAS	onitor changes in paramete controls including: RWST	ers (to prevent ex ' level	ceeding desig

ES-401 Wri	tten Examination (	Question Worksheet	Form	n-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 022.K 3.0	SRO  2.01
Proposed Question:	RO# 38, SEI	E ATTACHED		
Proposed Answer:	D			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): MDB 3.2.4 2	2B03 and 2B04		
Proposed references to	be provided to ap	plicants during examina	ation:	
Learning Objective:	LP0057/003		As available)	
Question Source:	Bank # Modified Bank New	(No 	te changes or at	tach parent)
Question History:	Last NRC Exan	<b>Bank: NEW</b>		
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally unde essitate a detailed review of e	rgo less rigorous re every question)	view by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowle ension or Analysis	dge	
10 CFR Part 55 Conte	nt: 55.4155.43	X		
K/A Statement: Know	ledge of power sup	pplies to the following:	Containment Co	oling Fans

	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline (	Cross-reference:	Level Tier # Group # K/A #	RO 2 1 022.A	SRO 2.05
		Importance Rating	3.1	
Proposed Question:	RO# 39, SEE	E ATTACHED		
Duonosod Answor	D			
Proposed Allswer.				
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	AOP 9A Ser	rvice Water System Ma	lfunction, SW	P&ID
Proposed references to	be provided to ap	plicants during examinat	ion:	
	LP0086/001	(A	s available)	
Learning Objective:				
Learning Objective: Ouestion Source:	Bank # Modified Bank New	(Note	e changes or at	tach parent)
Learning Objective: Ouestion Source: Question History:	Bank # Modified Bank New Last NRC Exan	MEW (Note NEW Bank: NEW	e changes or at	tach parent)
Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the	Bank # Modified Bank New Last NRC Exan lated at the facility sind e information will nece	(Note <b>NEW</b> <b>Bank: NEW</b> ce 10/95 will generally undergressitate a detailed review of events	e changes or at go less rigorous re very question)	tach parent)
Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le	Bank # Modified Bank New Last NRC Exan lated at the facility sind e information will nece evel: Memory of Comprehe	(Note <u>NEW</u> <b>Bank: NEW</b> ce 10/95 will generally undergessitate a detailed review of even or Fundamental Knowled ension or Analysis	e changes or at go less rigorous revery question) lge	tach parent)
Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le 10 CFR Part 55 Conte	Bank # Modified Bank New Last NRC Exan lated at the facility sind e information will nece evel: Memory of Comprehe nt: 55.41	(Note <u>NEW</u> <b>Bank: NEW</b> ce 10/95 will generally undergessitate a detailed review of even or Fundamental Knowled ension or Analysis <u>x</u>	e changes or at go less rigorous re very question) lge	tach parent)

K/A Statement: Ability to (a) predict the impact of the following malfunctions or operations on the Containment Cooling System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Major leak in Containment Cooling System

ES-401 Wr	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 026.A 3.6	SRO 2.07
Proposed Question:	RO# 40, SEE	E ATTACHED		
Proposed Answer: Explanation (Optional	C SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	s): ECA 1.3 Con sly	ntainment Sump Blo	ckage	
Proposed references to	b be provided to app	plicants during examir	nation:	
Learning Objective:	LP0465/0001	(	(As available)	
Ouestion Source:	Bank # Modified Bank New	(N NEW	ote changes or at	tach parent)
Question History:	Last NRC Exam	<b>Bank: NEW</b>		
(Optional - Questions valid NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally und essitate a detailed review of	lergo less rigorous re f every question)	eview by the
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knowl ension or Analysis	ledge	-
10 CFR Part 55 Conte	ent: 55.41	X		
	55.43	X		
K/A Statement: Ability	y to (a) predict the $\frac{1}{100}$	pact of the following ma	alfunctions or oper	rations on the

K/A Statement: Ability to (a) predict the impact of the following malfunctions or operations on the Containment Spray System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of containment spray pump suction when in recirculation mode, possibly caused by clogged sump screen, pump inlet high temperature, exceeded cavitation, voiding, or sump level below cutoff (interlock) limit

ES-401	Written	Examination	Question Worksheet	For	m-401-5
Examination Ou	atline Cross	s-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 026.A 4.3	SRO .3.01
Proposed Quest	ion:	RO# 41, SEI	E ATTACHED		
Proposed Answe	er:	C			
Explanation (Op	ptional):	SEE ATTAC	CHED		
Technical Refer	rence(s):	Logic 883D	195 sheets 8 and 9		
provided)	eviously				
provided) Proposed referen	nces to be j	provided to ap	plicants during examinat	tion:	
Proposed references	nces to be j	provided to ap . <b>P0064/004</b>	plicants during examinat	tion:	
Proposed reference Learning Object Ouestion Source	nces to be j tive: <u>L</u> e: B N N	provided to ap . <b>P0064/004</b> ank # Iodified Bank Iew	plicants during examinat (A PBNP EXAM BAN (Not	tion: s available) <b>K</b> te changes or a	ttach parent)
(Attach In hot pr provided) Proposed referen Learning Object Question Source Question Histor	nces to be j tive: <u>L</u> e: B N N v: L	provided to ap <b>P0064/004</b> Cank # Iodified Bank Iew ast NRC Exan	plicants during examination (A 	tion: s available) K te changes or a h 2003	ttach parent)
(Attach In hot pr provided) Proposed referen Learning Object Ouestion Source Question Histor (Optional - Question NRC; failure to pro	nces to be j tive: <u>L</u> e: B N v: L ons validated ovide the info	provided to ap <b>P0064/004</b> Cank # Aodified Bank New Cast NRC Exam at the facility sindown at the facility sindown	plicants during examinat (A <u>PBNP EXAM BAN</u> (Not n <u>Bank: Point Beacl</u> ce 10/95 will generally under essitate a detailed review of e	tion: s available) K te changes or a h 2003 go less rigorous r very question)	ttach parent) eview by the
(Attach In hot pr provided) Proposed referen Learning Object Question Source Question Histor (Optional - Question NRC; failure to pro Question Cognit	nces to be j tive: <u>L</u> e: B N v: L ons validated ovide the info tive Level:	provided to ap <b>P0064/004</b> ank # Iodified Bank Iew ast NRC Exan at the facility since rmation will nece Memory of Comprehe	plicants during examinat (A <u>PBNP EXAM BAN</u> (Not <b>Bank: Point Beacl</b> ce 10/95 will generally under essitate a detailed review of e or Fundamental Knowled ension or Analysis	tion: s available) K te changes or a h 2003 go less rigorous r very question) dge <u>1-I</u>	ttach parent) eview by the

ES-401	Writt	ten Examination (	Question Worksheet	For	rm-401-5
Examination (	Outline Cr	oss-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 039.4 3.1	SRO 43.02
Proposed Que	estion:	RO# 42, SEF	E ATTACHED		
Proposed Ans	swer:				
Explanation (	Optional):	SEE ATTAC	CHED		
<b>—</b> 1 · 1 <b>—</b> (	6	Logic MISC	C-391-92 Crossover Stea	m Dump Log	gic
(Attach if not provided)	previously	y	nlicants during examinat	ion:	
(Attach if not provided) Proposed refe	previously previously erences to l	be provided to ap	plicants during examinat	ion:	
<ul><li>Technical Ref (Attach if not provided)</li><li>Proposed refe</li><li>Learning Obje</li><li>Ouestion Sour</li></ul>	erence(s): previously erences to l ective: rce:	be provided to ap LP0051/004 Bank # Modified Bank New	plicants during examinat (A: 	ion: s available) e changes or a	attach parent
<ul><li>Technical Ref (Attach if not provided)</li><li>Proposed refe</li><li>Learning Obje</li><li>Ouestion Sour</li><li>Question Hist</li></ul>	erence(s): previously erences to l ective: rce:	be provided to ap LP0051/004 Bank # Modified Bank New Last NRC Exan	plicants during examinat (As (Note <u>NEW</u> n <u>Bank: NEW</u>	ion: s available) e changes or a	attach parent
Technical Ref (Attach if not provided) Proposed refe Learning Obje Ouestion Sour Question Hist (Optional - Ques NRC; failure to p	erence(s): previously erences to l ective: rce: tory: stions valida provide the i	be provided to app LP0051/004 Bank # Modified Bank New Last NRC Exan ted at the facility sind information will nece	plicants during examinat (As (Note <u>NEW</u> n <u>Bank: NEW</u> ce 10/95 will generally underg essitate a detailed review of ev	ion: s available) e changes or a go less rigorous : very question)	nttach parent
Technical Ref (Attach if not provided) Proposed refe Learning Obje Ouestion Sour Question Hist (Optional - Ques NRC; failure to p Question Cog	erence(s): previously erences to l ective: rce: tory: stions valida provide the i	be provided to ap LP0051/004 Bank # Modified Bank New Last NRC Exan ted at the facility sind information will nece rel: Memory of Comprehe	plicants during examinat (A: (Note <u>NEW</u> n <u>Bank: NEW</u> ce 10/95 will generally undergessitate a detailed review of ex- por Fundamental Knowled ension or Analysis	ion: s available) e changes or a go less rigorous : yery question) ge <u>2-DR</u>	attach parent

ES-401 Wri	tten Examination (	Question Worksheet	Form-401-5
Examination Outline O	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       2
Proposed Question:	RO# 43, SEI	E ATTACHED	
Proposed Answer:	D		
Explanation (Optional	): SEE ATTAC	CHED	
Technical Reference(s (Attach if not previous provided)	0-SOP-IC-0 ): <u>Steam Dum</u> sly	01 WHITE Routine Ma p Logic 883D195-17	intenance Procedure,
Proposed references to	be provided to ap	plicants during examinat	ion:
Learning Objective:	LP0035/004	(As	s available)
Ouestion Source:	Bank # Modified Bank New	PBNP BANK (Note	e changes or attach parent)
Question History:	Last NRC Exan	m Bank: PBNP Secon	ndaries Bank
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally underg	o less rigorous review by the ery question)
Question Cognitive Le	Comprehe	or Fundamental Knowled	2-DR
10 CFR Part 55 Conte	nt: 55.4155.43	X	
K/A Statement: Ability	to manually operate	e and/or monitor in the cont	rol room: Steam dump valves

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ine Cross-reference:	Level	RO SRO
	Tier # Group # K/A # Importance Rating	2 1 059.A4.12 3.4
n: RO# 44, SF	EE ATTACHED	
B		
onal): SEE ATTA	CHED	
ce(s): LER-301/2 viously	2003-005, Logic 883D195	5 - 10
es to be provided to a	pplicants during examina	tion:
Bank # Modified Ban New	(F	te changes or attach parent)
Last NRC Exa	am Bank: NEW	
validated at the facility side the information will ne	ince 10/95 will generally under ecessitate a detailed review of e	rgo less rigorous review by the every question)
e Level: Memory Compre	or Fundamental Knowle hension or Analysis	dge
ontent: 55.41	X	
	n: RO# 44, SH B B SEE ATTA SEE ATTA SEE ATTA SEE ATTA SEE ATTA LER-301/2 Consolv es to be provided to a re: LP0131/003 Bank # Modified Ban New Last NRC Exa validated at the facility so de the information will new Ye Level: Memory Compression Compression S5.41	K/A # Importance Rating         n:       RO# 44, SEE ATTACHED         : $B$ onal):       SEE ATTACHED         ace(s):       LER-301/2003-005, Logic 883D195         viously

ES-401 Wri	tten Examination	Question Worksheet	For	rm-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 059.2 4.1	SRO 2.4.45
Proposed Question:	RO# 45, SEI	E ATTACHED		
Proposed Answer:	<u> </u>			
Explanation (Optional)	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	AOP-2B See ): Book 1C03 2 ly	condary System Malfun 1E2 1-2	nction, Alarm	Response
Learning Objective:	LP2439/001	plicants during examina	tion:	
Ouestion Source:	Bank # Modified Bank New	(Not	te changes or a	ttach parent)
Question History:	Last NRC Exar	m Bank: NEW		
(Optional - Questions valid NRC; failure to provide the	ated at the facility sin information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous i	review by the
Question Cognitive Le	evel: Memory of Comprehe	or Fundamental Knowled ension or Analysis	dge	_
10 CFR Part 55 Conter	nt: 55.41	x x		
K/A Statement: Ability (Main Feedwater)	to prioritize and int	erpret the significance of e	each annunciato	r or alarm.

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	tten Examination (	Question Worksheet	For	m-401-5
Examination Outline C	cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 061.H 3.9	SRO 
Proposed Question:	RO# 46, SEI	E ATTACHED		
Proposed Answer:	A			
Explanation (Optional)	SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous) provided)	EOP 0.1 Re:	actor Trip Response Ste	ep 1	
Proposed references to	be provided to ap	plicants during examinat	ion:	
Learning Objective:	LP0405/015	(As	s available)	
Ouestion Source:	Bank # Modified Bank New	INPO 21450 (Note	e changes or a	ttach parent)
Question History:	Last NRC Exan	<b>Bank: INPO 2145</b>	) Braidwood	2002
(Optional - Questions validation NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally undergessitate a detailed review of ev	go less rigorous r very question)	eview by the
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	ge <b>2-DR</b>	_

ES-401 W	ritten Examination	Question Worksheet	For	rm-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 061.2 3.1	SRO 2.2.36
Proposed Question:	RO# 47, SEI	E ATTACHED		
Proposed Answer:	<u> </u>			
Explanation (Optiona	l): SEE ATTAC	CHED		
Technical Reference	(s): IT-10 MDA	FW Pump Quarterly To	est	
Technical Reference( (Attach if not previou provided) Proposed references t	(s): ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY ISIY	FW Pump Quarterly To DAFW Valve Line Up In tripping HDT pump ( P-38A MDAFW Pump I tor Driven Aux Feed Sy plicants during examinat	est CAP1123764 Backup N2 D rstem ion:	) Decay Test
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective:	(s): Isly Isly Isly Isly Isly Isly Plant OE on 0-PT-AF-1 I OI-62A Mot OI-62A Mot DI-62A Mot	FW Pump Quarterly To DAFW Valve Line Up In tripping HDT pump ( P-38A MDAFW Pump I tor Driven Aux Feed Sy plicants during examinat (A	est CAP1123764 Backup N2 D stem ion: s available)	) Decay Test
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective: Question Source:	(s): Isly Isly (s): Isly <b>CL-13E ME</b> <b>Plant OE on</b> <b>0-PT-AF-1 I</b> <b>OI-62A Mot</b> to be provided to ap <b>LP0169/005</b> Bank # Modified Bank New	FW Pump Quarterly To         DAFW Valve Line Up         In tripping HDT pump (0         P-38A MDAFW Pump I         tor Driven Aux Feed Sy         plicants during examinat	est CAP1123764 Backup N2 D stem ion: s available) e changes or a	) Decay Test
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective: Question Source: Question History:	(s): Isly Isly (c): Isly Isly CL-13E ME Plant OE on 0-PT-AF-1 I OI-62A Mot OI-62A Mot Expo169/005 Bank # Modified Bank New Last NRC Exam	FW Pump Quarterly To         DAFW Valve Line Up         In tripping HDT pump (P-38A MDAFW Pump I         tor Driven Aux Feed Sy         plicants during examinat	est CAP1123764 Backup N2 D stem ion: s available) e changes or a	) Decay Test
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective: Ouestion Source: Question History: (Optional - Questions vali NRC; failure to provide th	(s): Isly Isly (c): Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly	FW Pump Quarterly To         DAFW Valve Line Up         In tripping HDT pump (Possed MDAFW Pump I         P-38A MDAFW Pump I         tor Driven Aux Feed Sy         plicants during examinat	est CAP1123764 Backup N2 D stem ion: s available) s available) e changes or a go less rigorous n very question)	) Decay Test
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective: Ouestion Source: Question History: (Optional - Questions vali NRC; failure to provide th Question Cognitive L	(s): IT-10 MDA CL-13E MD Plant OE on 0-PT-AF-1 I OI-62A Mot to be provided to ap LP0169/005 Bank # Modified Bank New Last NRC Exant idated at the facility sim- he information will nece Level: Memory of Comprehe	FW Pump Quarterly To         DAFW Valve Line Up         In tripping HDT pump (P-38A MDAFW Pump I         tor Driven Aux Feed Sy         plicants during examinat	est CAP1123764 Backup N2 D stem ion: s available) e changes or a go less rigorous r very question) lge <u>1- P</u>	) Decay Test
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective: Question Source: Question History: (Optional - Questions vali NRC; failure to provide th Question Cognitive L 10 CFR Part 55 Conte	(s): Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly Isly	FW Pump Quarterly To         DAFW Valve Line Up         In tripping HDT pump (P         P-38A MDAFW Pump I         tor Driven Aux Feed Sy         plicants during examinat	est CAP1123764 Backup N2 D stem ion: s available) e changes or a go less rigorous r very question) lge	) Decay Test

sources, on the status of limiting conditions for operation. (Auxiliary/Emergency Feedwater)

ES-401 Wr	itten Examination	Question Worksheet	For	rm-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 062.1 4.1	SRO 
Proposed Question:	RO# 48, SEI	E ATTACHED		
Proposed Answer:	ASFE ATTAC	THED		
	יי 883D105 сь	eets 6 and 64 I D0122 I	marganay r	Jiasal
Technical Reference(s	s): <u>Generators</u>		mergency L	viesei
provided)				
Proposed references to	o be provided to ap	plicants during examinati	on:	
Proposed references to Learning Objective:	o be provided to ap 	plicants during examinati	on: s available)	
Proposed references to Learning Objective: Ouestion Source:	o be provided to ap LP0133/004 Bank # Modified Bank New	plicants during examinati (As PBNP EXAM BANK (Note	on: s available) S e changes or a	ttach parent
<ul><li>(Attach in hot previou provided)</li><li>Proposed references to Learning Objective:</li><li>Ouestion Source:</li><li>Question History:</li></ul>	o be provided to ap LP0133/004 Bank # Modified Bank New Last NRC Exar	plicants during examinati (As <u>PBNP EXAM BANK</u> (Note n <u>Bank: Point Beach</u>	on: s available) C changes or a <b>1999</b>	nttach parent)
<ul> <li>Question History:</li> <li>(Optional - Questions valie)</li> </ul>	o be provided to ap <u>LP0133/004</u> Bank # Modified Bank New Last NRC Exan dated at the facility sin the information will neces	plicants during examinati (As <u>PBNP EXAM BANK</u> (Note n <u>Bank: Point Beach</u> ce 10/95 will generally underg essitate a detailed review of ev	on: s available) c changes or a <b>1999</b> o less rigorous r ery question)	attach parent,
<ul> <li>Proposed references to</li> <li>Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valiander)</li> <li>Question Cognitive Laboration</li> </ul>	o be provided to ap <u>LP0133/004</u> Bank # Modified Bank New Last NRC Exar dated at the facility sin te information will neco evel: Memory of Comprehe	plicants during examinati (As PBNP EXAM BANK (Note m Bank: Point Beach ce 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowledgension or Analysis	on: s available) c changes or a <u>1999</u> o less rigorous r ery question) ge <u>1-I</u>	tttach parent,

ES-401 Wri	tten Examination (	Question Worksheet	Form	n-401-5
Examination Outline C	cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 062.K 3.3	SRO  2.01
Proposed Question:	RO# 49, SEI	E ATTACHED		
Proposed Answer:	<u> </u>			
Explanation (Optional)	SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous provided)	): Master Data ly	a Book 3.2.1 1A01		
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	LP0007/012	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	INPO 21452 (Not	te changes or att	ach parent)
Question History:	Last NRC Exan	m Bank: INPO 2145	2 Braidwood 2	002
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	rgo less rigorous re very question)	view by the
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge <u>1-I</u>	
10 CFR Part 55 Conter	nt: 55.41	X		
K/A Statement: Knowle electrical distribution)	55.43	upplies to the following: N	Aajor system load	ls (AC

NO# 50, SEE B SEE ATTAC Lesson Plan be provided to app	Level Tier # Group # K/A # Importance Rating E ATTACHED CHED 0124 480V Distributio	RO     SRO       2     1       063.K3.02       3.5
RO# 50, SEE B SEE ATTAC Lesson Plan be provided to app	E ATTACHED CHED 0124 480V Distributio	<u>n</u>
B SEE ATTAC Lesson Plan	CHED 0124 480V Distributio	n
SEE ATTAC	CHED 0124 480V Distributio	n
Lesson Plan	0124 480V Distributio	n
be provided to an		
r	plicants during examination	tion:
LP0124/018	(A	as available)
Bank # Modified Bank New	PBNP BANK (Not	te changes or attach parent)
Last NRC Exan	<b>Bank: PBNP LOR</b>	R Bank
ed at the facility sind nformation will nece	ce 10/95 will generally under essitate a detailed review of e	rgo less rigorous review by the every question)
el: Memory o Comprehe	or Fundamental Knowlec ension or Analysis	dge <u>1-I</u>
: 55.41 55.43	X	
- r e	LP0124/018 Bank # Modified Bank New Last NRC Exan ed at the facility sind formation will nece el: Memory of Comprehe 55.41 55.43 lge of the effect the	LP0124/018       (A         Bank #       PBNP BANK         Modified Bank       (Not         New

ES-401	Written Examination	Question Worksheet	Form	n-401-5
Examination Outl	ine Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 1 064.Ka 2.8	SRO 
Proposed Question	n: RO# 51, SE	E ATTACHED		
Proposed Answer	A			
Explanation (Opti	onal): SEE ATTAC	CHED		
	() Losson Dlar	n 0133 Emergency Diese	l Generators.	
Technical Referer (Attach if not prev provided)	viously OP-11A ED	OG G-01 P&L 3.6.1		
Technical Referer (Attach if not prev provided) Proposed referenc	es to be provided to ap	OG G-01 P&L 3.6.1	ion:	
Technical Referer (Attach if not prev provided) Proposed referenc Learning Objectiv	es to be provided to ap	oplicants during examinat	ion:s available)	
Technical Referer (Attach if not prev provided) Proposed referenc Learning Objectiv Question Source:	re: LP0133/007 Bank # Modified Bank New	pplicants during examination (Astronomy Banks) (Note	ion: s available) e changes or att	ach parent)
Technical Referer (Attach if not prev provided) Proposed referenc Learning Objectiv Ouestion Source: Question History:	es to be provided to ap re: LP0133/007 Bank # Modified Bank New Last NRC Exan	OG G-01 P&L 3.6.1           oplicants during examination	ion: s available) e changes or att ndaries bank	ach parent)
Technical Referer (Attach if not prev provided) Proposed referenc Learning Objectiv Ouestion Source: Question History: (Optional - Questions NRC; failure to provid	re: LP0133/007 Bank # Modified Bank New Last NRC Exan validated at the facility sin de the information will nec	pplicants during examination (As <u>PBNP BANK</u> (Note <u>Bank: PBNP Secon</u> (Note <u>Bank: PBNP Secon</u> ace 10/95 will generally undergessitate a detailed review of events of	ion: s available) e changes or att ndaries bank go less rigorous re- very question)	tach parent)
Technical Referer (Attach if not prev provided) Proposed referenc Learning Objectiv Ouestion Source: Question History: (Optional - Questions NRC; failure to provid Question Cognitiv	es to be provided to ap es to be provided to ap re: LP0133/007 Bank # Modified Bank New Last NRC Exan validated at the facility sin de the information will nec re Level: Memory of Comprehe	OG G-01 P&L 3.6.1         Oplicants during examination         (Astronomic product of the second seco	ion: s available) e changes or att ndaries bank go less rigorous re- very question) ge <u>1-I</u>	each parent)

ES-401	Written Examination	n Question Worksheet	Form-401-5
Examination Outlin	ne Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       2
Proposed Question	RO# 52, SI	EE ATTACHED	
Proposed Answer: Explanation (Optio	B SEE ATTA	ACHED	
Technical Reference (Attach if not previ provided)	e(s): <b>RMSASR</b> ously	B CI 1RE-109	
Proposed reference	s to be provided to a	applicants during examination	ation:
Learning Objective	: LP0286/001	(4	As available)
Ouestion Source:	Bank # Modified Ban New	PBNP EXAM BAN           k         (No	<b>K</b> te changes or attach parent)
Question History:	Last NRC Ex	am Bank: Point Beac	h 2003
(Optional - Questions NRC; failure to provid	validated at the facility s e the information will ne	ince 10/95 will generally unde ecessitate a detailed review of	rgo less rigorous review by the every question)
Question Cognitive	E Level: Memory Compre	v or Fundamental Knowle hension or Analysis	dge
10 CFR Part 55 Co	ntent: 55.41	X	

K/A Statement: Knowledge of the operational implications of the following concepts as they apply to the PRM system: Radiation Theory, including sources, types, units, and effects

	tten Examination (	Question Worksheet	Form-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       2     1       076.A4.04       3.5
Proposed Question:	RO# 53, SEI	E ATTACHED	
Proposed Answer:	D		
Explanation (Optional)	): SEE ATTAC	CHED	
Technical Reference(s) (Attach if not previous provided)	): 883D195 Sh ly	eets 8 and 9	
		plicants during examinat	ion:
Proposed references to	be provided to ap	8	
Proposed references to Learning Objective:	LP0486/012	(As	s available)
Proposed references to Learning Objective: Ouestion Source:	LP0486/012 Bank # Modified Bank New	(As <u>PBNP EXAM BANE</u> (Note	s available) K e changes or attach parent)
Proposed references to Learning Objective: Ouestion Source: Question History:	LP0486/012 Bank # Modified Bank New Last NRC Exan	(As <u>PBNP EXAM BANK</u> (Note n <u>Bank: Point Beach</u>	s available) K e changes or attach parent) 2005
Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the	be provided to ap LP0486/012 Bank # Modified Bank New Last NRC Exan lated at the facility since information will nece	(As <u>PBNP EXAM BANK</u> (Note n <u>Bank: Point Beach</u> ce 10/95 will generally underg essitate a detailed review of ev	s available) c changes or attach parent; 2005 go less rigorous review by the tery question)
Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le	LP0486/012 Bank # Modified Bank New Last NRC Exan lated at the facility since information will nece	(As <u>PBNP EXAM BANK</u> (Note m <u>Bank: Point Beach</u> ce 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowled ension or Analysis	s available) c changes or attach parent; 2005 go less rigorous review by the very question) ge <u>1-I</u>

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ES-401 Wri	tten Examination (	Question Worksheet	Form-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO SRO 2 1 078.2.4.11 4.0
Proposed Question:	RO# 54, SEI	E ATTACHED	
Proposed Answer:	<u> </u>		
Explanation (Optional)	): SEE ATTAC	CHED	
Technical Reference(s (Attach if not previous provided)	AOP 5B Los 883D195 Sh ly	ss of Instrument Air At eet 2	tachments A and S,
Proposed references to	be provided to ap	plicants during examinat	ion:
Learning Objective:	LP0338/007	(A	s available)
Ouestion Source:	Bank # Modified Bank New	PBNP BANK (Not	e changes or attach parent)
Question History:	Last NRC Exan	m Bank: PBNP LOR	Exam Bank
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous review by the very question)
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowlec ension or Analysis	lge
10 CFR Part 55 Conten	nt: 55.41 _	X	
	55.43	X	
K/A Statement: Knowl	edge of abnormal co	ondition procedures (Instru	ment Air)

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Acce: Level Tier # Group # K/A # Importance Rating	RO     SRO       2
75, SEE ATTACHED	
ATTACHED	
ATTACHED	
E Containment Closure Chec	klist
d to applicants during examina	tion:
<b>004</b> (A	As available)
Bank (Not	<b>K</b> te changes or attach parent)
C Exam Bank: Point Beac	h 2003
ility since 10/95 will generally under vill necessitate a detailed review of e	rgo less rigorous review by the every question)
mory or Fundamental Knowled	dge <b>2-DR</b>
nprenension or Analysis	
	mory or Fundamental Knowled mprehension or Analysis 41 <u>x</u> 43

ES-401 Wri	tten Examination (	Question Worksheet	For	rm-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 011.2 4.6	SRO 2.1.20
Proposed Question:	RO# 56, SEF	EATTACHED		
Proposed Answer:	B			
Explanation (Optional)	): SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous provided)	): AOP 1D CV ly CVCS P&II OP 5E Estal	CS malfunction step 4 OWEST19 684J741 Sh blishing and Securing F	9, . 2 Excess Letdov	vn
Learning Objective:	LP0079/009	plicants during examinat	tion:	
Ouestion Source:	Bank #			
	Modified Bank New	(Not	e changes or a	ttach parent)
Question History:	Modified Bank New Last NRC Exan	(Not 	e changes or a	ttach parent)
Question History: (Optional - Questions valid NRC; failure to provide the	Modified Bank New Last NRC Exan ated at the facility sind information will nece	(Not <u>NEW</u> <b>Bank: NEW</b> ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	ttach parent)
Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le	Modified Bank New Last NRC Exan lated at the facility sind information will nece vel: Memory of Comprehe	(Not <u>NEW</u> a <u>Bank: NEW</u> ce 10/95 will generally under essitate a detailed review of e or Fundamental Knowled ension or Analysis	go less rigorous i very question) lge <u>1-P</u>	ttach parent) review by the
Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le 10 CFR Part 55 Conter	Modified Bank New Last NRC Exan lated at the facility sind information will nece evel: Memory of Comprehe nt: 55.41	(Not <u>NEW</u> <b>Bank: NEW</b> ce 10/95 will generally under essitate a detailed review of e or Fundamental Knowled ension or Analysis <u>x</u>	go less rigorous rigo	ttach parent)

ES-401 Wr	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 015.K 4.1	SRO 
Proposed Question:	RO# 57, SEE	EATTACHED		
Proposed Answer:	D			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previou provided)	s): STPT 4.1 Ro sly Lesson Plan Trip Logic s	od Stops, 0273 Reactor Protectio heet 12	on Overview,	
Proposed references to	b be provided to ap	plicants during examinat	ion:	
Learning Objective:	LP0273/007	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	(Note	e changes or a	ttach parent)
Question History:	Last NRC Exan	<b>Bank: INPO 2677</b>	6 Kewaunee 2	004
(Optional - Questions valions) NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally undergessitate a detailed review of ev	go less rigorous r very question)	eview by the
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis		-
10 CFR Part 55 Conte	ent: 55.41	X		
	55.43			
V/A Statement: Vnow	ladge of the physical	connections and/or course	offoot polotion a	ing between the

K/A Statement: Knowledge of the physical connections and/or cause-effect relationships between the NIS and the following system: RPS

ES-401 Wr	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 017.A 3.6	SRO .3.01
Proposed Question:	RO# 58, SEF	E ATTACHED		
Proposed Answer:	B SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	s): EOP 1.2 Sm sly EOP-0 Reac	all Break LOCA Coold tor Trip and Safety Injo	own and Dep ection foldou	pressurization t page
Proposed references to	b be provided to ap	plicants during examinati	on:	
Learning Objective:	LP0407/001	(As	s available)	
<b>Ouestion Source:</b>	Bank # Modified Bank New	PBNP EXAM BANK (Note	changes or a	ttach parent)
Question History:	Last NRC Exan	<b>Bank: Point Beach</b>	2002	
(Optional - Questions valid NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally underg essitate a detailed review of ev	o less rigorous reery question)	eview by the
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knowled; ension or Analysis	ge	-
10 CFR Part 55 Conte	ent: 55.41	X		
	55.43			
K/A Statement: Ability	to monitor outomat	is operation of the ITM suc	tom including.	Indiantions of

K/A Statement: Ability to monitor automatic operation of the ITM system including: Indications of normal, natural, and interrupted circulation of the RCS

ES-401 Wri	tten Examination (	Question Worksheet	For	m-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 055.K 2.5	SRO 
Proposed Question:	RO# 59, SEI	E ATTACHED		
Proposed Answer:	A			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): Lesson Plan bly	N-RO-01-L-011-I, Hea	at Exchangers	
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective: Question Source:	LP2439/004 Bank # Modified Bank New	(A 	s available) <b>K</b> e changes or at	tach parent)
Question History:	Last NRC Exan	m Bank: PBNP 2005		
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous re very question)	eview by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge	-
10 CFR Part 55 Conte	nt: 55.4155.43	<u>x</u>		
K/A Statement: Knowl following: Main conden	edge of the effect th ser	at a loss or malfunction of	the CARS will l	have on the

ES-401 Wr	itten Examination	Question Worksheet	For	m-401-5
Examination Outline (	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 045.K 2.5	SRO 
Proposed Question:	RO# 60, SEI	E ATTACHED		
Proposed Answer:	D			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided) Proposed references to	s): TS-4A Turb sly M-213 Sh 2 Lesson Plan	oine Trip Test, EH system print, 0021 EH System plicants during examinat	tion:	
Learning Objective:	LP0021/003	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	(Not	e changes or a	ttach parent)
Question History:	Last NRC Exan	m Bank: NEW		
(Optional - Questions valid NRC; failure to provide the	dated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	eview by the
	evel: Memory o	or Fundamental Knowled ension or Analysis	lge <b>2-RI</b>	_
Question Cognitive Le	Comprehe	J		_

	ritten Examination	Question Worksheet	For	m-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A #	RO 2 2 056.A	SRO 2.04
		Importance Rating	2.6	
Proposed Question:	RO# 61, SEI	E ATTACHED		
Proposed Answer:	<u> </u>			
Explanation (Optiona	l): SEE ATTAC	CHED		
	Alarm Resp	oonse Book 1C03 1E2 2-1	1. STPT 14.2	Condensat
Technical Reference( (Attach if not previou provided) Proposed references t	s): <b>and Feedwa</b> asly to be provided to ap	nter	on:	
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective:	s): <u>and Feedwa</u> isly to be provided to ap LP2439/001	pplicants during examinati	on:	
Technical Reference( (Attach if not previou provided) Proposed references t Learning Objective: Ouestion Source:	s): <u>and Feedwa</u> usly to be provided to ap <u>LP2439/001</u> Bank # Modified Bank New	nter pplicants during examinati (As <u>INPO 28852</u> (Note	on: s available) e changes or at	tach parent;
Technical Reference( (Attach if not previou provided) Proposed references to Learning Objective: Question Source:	s): <u>and Feedwa</u> usly to be provided to ap <u>LP2439/001</u> Bank # Modified Bank New Last NRC Exar	nter pplicants during examinati (As <u>INPO 28852</u> (Note m <u>Bank: INPO 28852</u>	on: available) changes or at <b>Indian Point</b>	tach parent;
Technical Reference( (Attach if not previou provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions val NRC; failure to provide to	s): <u>and Feedwa</u> asly to be provided to ap <u>LP2439/001</u> Bank # Modified Bank New Last NRC Exar idated at the facility sin he information will nece	pplicants during examinati pplicants during examinati (As <u>INPO 28852</u> (Note m <u>Bank: INPO 28852</u> ce 10/95 will generally underg essitate a detailed review of ev	on: s available) e changes or at c <b>Indian Point</b> o less rigorous re ery question)	tach parent) t <b>2004</b> eview by the
Technical Reference( (Attach if not previou provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions val NRC; failure to provide the Question Cognitive L	s): <u>and Feedwa</u> asly to be provided to ap <u>LP2439/001</u> Bank # Modified Bank New Last NRC Exar idated at the facility sin he information will neco Level: Memory of Comprehe	pplicants during examinati pplicants during examinati (As <u>INPO 28852</u> (Note <u>Bank: INPO 28852</u> ce 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowledgension or Analysis	on: s available) changes or at changes or at <u>f Indian Point</u> o less rigorous re ery question) ge <u>1-I</u>	tach parent; t <b>2004</b> eview by the
Technical Reference( (Attach if not previou provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions val NRC; failure to provide to Question Cognitive L 10 CFR Part 55 Cont	s): <u>and Feedwa</u> asly to be provided to ap <u>LP2439/001</u> Bank # Modified Bank New Last NRC Exar idated at the facility sin the information will nece Level: Memory of Comprehe- ent: 55.41	pplicants during examinati pplicants during examinati (As <u>INPO 28852</u> (Note m <u>Bank: INPO 28852</u> ce 10/95 will generally underg essitate a detailed review of ev fundamental Knowledgension or Analysis <u>x</u>	on: s available) c changes or at changes or at f <b>Indian Point</b> o less rigorous re ery question) ge <u>1-I</u>	tach parent) t <b>2004</b> eview by the

ES-401	Written Examination (	Question Worksheet	For	rm-401-5
Examination Outlin	ne Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 068.1 2.5	SRO  K6.10
Proposed Question	:: RO# 62, SEE	EATTACHED		
Proposed Answer:	D			
Explanation (Optic	onal): SEE ATTAC	CHED		
	RMSASRB	CI RE-218,		
Technical Reference (Attach if not previ- provided)	iously			
Technical Reference (Attach if not previ provided) Proposed reference	iously	plicants during examinat	ion:	
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective	es to be provided to appe:	plicants during examinat	ion: s available)	
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Ouestion Source:	es to be provided to app e: <u>LP0063/005</u> Bank # Modified Bank New	plicants during examinat (A: <u>INPO 22871</u> (Note	ion: s available) e changes or a	uttach parent)
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Ouestion Source: Question History:	es to be provided to app e: <u>LP0063/005</u> Bank # Modified Bank New Last NRC Exan	plicants during examinat (A: (A: (Note 	ion: s available) e changes or a l <b>DC Cook 2</b> (	uttach parent)
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Question Source: Question History: (Optional - Questions NRC; failure to provid	es to be provided to app e: <u>LP0063/005</u> Bank # Modified Bank New Last NRC Exan validated at the facility since	plicants during examinat (As <u>INPO 22871</u> (Note <u>Bank: INPO 22871</u> ce 10/95 will generally underg essitate a detailed review of ex	ion: s available) e changes or a <u>l DC Cook 20</u> go less rigorous r yery question)	nttach parent) 0 <b>02</b> review by the
Technical Reference (Attach if not previ provided) Proposed reference Learning Objective Ouestion Source: Question History: (Optional - Questions NRC; failure to provid Question Cognitive	es to be provided to app es to be provided to app e: <u>LP0063/005</u> Bank # Modified Bank New Last NRC Exam validated at the facility sind le the information will nece e Level: Memory of Comprehe	plicants during examinat (As <u>INPO 22871</u> (Note <u>Bank: INPO 22871</u> (Note <u>Bank: INPO 22871</u> (Note of Fundamental Knowled ension or Analysis	ion: s available) e changes or a l DC Cook 20 go less rigorous r yery question) ge1-I	nttach parent) 002 review by the
Technical Reference (Attach if not previ- provided) Proposed reference Learning Objective Ouestion Source: Question History: (Optional - Questions NRC; failure to provid Question Cognitive 10 CFR Part 55 Co	es to be provided to app es to be provided to app e: <u>LP0063/005</u> Bank # Modified Bank New Last NRC Exan validated at the facility sind le the information will nece e Level: Memory of Comprehe ontent: 55.41	plicants during examinat (As <u>INPO 22871</u> (Note <u>Bank: INPO 22871</u> ce 10/95 will generally underg essitate a detailed review of even or Fundamental Knowled ension or Analysis <u>x</u>	ion: s available) e changes or a l <b>DC Cook 2</b> ( go less rigorous r yery question) ge <u>1-I</u>	attach parent) 002 review by the

ES-401 Wri	tten Examination (	Question Worksheet	Form	-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 071.A1 2.5	SRO .06
Proposed Question:	RO# 63, SEE	E ATTACHED		
Proposed Answer: Explanation (Optional)	D SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous provided)	): ly Alarm Resp RMSASRB Vent P&IDs	narge of Gas Decay Tar onse Book 1C04 1C 2-9 CI FT-3298A M-215 Sh.1 and M215	nks Step 4.4 and Sh. 3	d Note,
Proposed references to	be provided to ap	plicants during examinat	ion:	
Learning Objective: Ouestion Source:	LP0052/005 Bank # Modified Bank New	(A <u>PBNP EXAM BANI</u> (Note	s available) K e changes or atta	ach parent)
Question History:	Last NRC Exan	Bank: Point Beach	2003	
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally undergessitate a detailed review of ev	go less rigorous rev very question)	view by the
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	ge <u>1-P</u>	
10 CFR Part 55 Conten	nt: 55.41	X		

K/A Statement: Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the Waste Gas Disposal System controls including: Ventilation system

LD- <del>1</del> 01	Vritten Examination	n Question Worksheet	Form-401-5
Examination Outline	e Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       2     2       075.A2.01     3.0
Proposed Question:	RO# 64, S	EE ATTACHED	
Proposed Answer:	D		
Explanation (Option	al): SEE ATT	ACHED	
Technical Reference (Attach if not previo	e(s): OI 38 Cir usly	culating Water System O	peration
provided)			
Proposed references	to be provided to	applicants during examination	tion:
Proposed references Learning Objective:	to be provided to LP0151/005	applicants during examination (A	tion: .s available)
Proposed references Learning Objective: Ouestion Source:	to be provided to LP0151/005 Bank # Modified Ba New	applicants during examinat (A PBNP BANK nk (Not	tion: s available) e changes or attach parent
Proposed references Learning Objective: Ouestion Source: Question History:	to be provided to LP0151/005 Bank # Modified Ba New Last NRC Ex	applicants during examination (A (A PBNP BANK nk (Not am Bank: PBNP LOR	tion: .s available) e changes or attach parent <b>2 Bank</b>
Proposed references Learning Objective: Ouestion Source: Question History: (Optional - Questions va NRC; failure to provide	to be provided to LP0151/005 Bank # Modified Ba New Last NRC Ex lidated at the facility the information will r	applicants during examinat (A PBNP BANK nk (Not am Bank: PBNP LOR since 10/95 will generally under ecessitate a detailed review of e	tion: s available) e changes or attach parent <b>2 Bank</b> go less rigorous review by the very question)
Proposed references Learning Objective: Ouestion Source: Question History: (Optional - Questions va NRC; failure to provide Question Cognitive	to be provided to LP0151/005 Bank # Modified Ba New Last NRC Es lidated at the facility the information will r Level: Memor Compresent	applicants during examinat (A PBNP BANK nk (Not am Bank: PBNP LOR since 10/95 will generally under ecessitate a detailed review of e y or Fundamental Knowled chension or Analysis	tion: s available) e changes or attach parent <b>2 Bank</b> go less rigorous review by the very question) lge <u>2-RI</u>
Proposed references Learning Objective: Ouestion Source: Question History: (Optional - Questions va NRC; failure to provide Question Cognitive 1 10 CFR Part 55 Con	to be provided to LP0151/005 Bank # Modified Ba New Last NRC Ex lidated at the facility the information will r Level: Memor Compresent tent: 55.41	applicants during examinat (A PBNP BANK nk (Not am Bank: PBNP LOR since 10/95 will generally under ecessitate a detailed review of e y or Fundamental Knowled chension or Analysis x	tion: s available) e changes or attach parent <b>2 Bank</b> go less rigorous review by the very question) lge 2-RI

Circulating Water system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of intake structure

ES-401 Wri	tten Examination (	Question Worksheet	For	m-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2 2 086.A 3.5	SRO
Proposed Question:	RO# 65, SEE	E ATTACHED		
Proposed Answer: Explanation (Optional	B SEE ATTAC	HED		
Technical Reference(s (Attach if not previous provided)	): AUT017 351 ly Alarm Resp	.05 A-27 (C-900 overla onse Book C01 B 4-2	ay drawing),	
Proposed references to	be provided to app	plicants during examina	ation:	
Learning Objective:	LP0003/008	(4	As available)	
Ouestion Source:	Bank # Modified Bank New	(No NEW	te changes or a	ttach parent)
(Optional - Questions valid NRC; failure to provide the	lated at the facility since information will nece	ce 10/95 will generally understate a detailed review of	rgo less rigorous r every question)	eview by the
Question Cognitive Le	evel: Memory o Comprehe	r Fundamental Knowle nsion or Analysis	edge1-I	-
10 CFR Part 55 Conte	nt: 55.41 55.43	X		
K/A Statement: Ability	to manually operate	e and/or monitor in the co	ntrol room: Fire	detection panels

ES-401 Wri	tten Examination	Question Worksheet	Form-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       3
Proposed Question:	RO# 66, SEI	E ATTACHED	
Proposed Answer:	D		
Explanation (Optional)	): SEE ATTAC	CHED	
Technical Reference(s (Attach if not previous provided)	OM 3.10 op section 5.4 a ly	erator Personnel Assign and 5.5	ments and Scheduling
Proposed references to	be provided to ap	plicants during examination	ion:
Learning Objective:	SD86.1/2.1.01	(As	s available)
Ouestion Source:	Bank # Modified Bank New	<u>INPO 29448</u> (Note	e changes or attach parent)
Question History:	Last NRC Exan	m Bank: INPO 29448	Beaver Valley 2006
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally undergessitate a detailed review of ev	go less rigorous review by the ery question)
Question Cognitive Le	evel: Memory of Comprehe	or Fundamental Knowled ension or Analysis	ge
10 CFR Part 55 Conten	nt: 55.41	X	
	55.43		
K/A Statement: Knowl	edge of conduct of c	operations requirements	

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ES-401 Wr	ritten Examination	Question Worksheet	Form-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO SRO 3 2.1.09 2.9
Proposed Question:	RO# 67, SEI	E ATTACHED	
Proposed Answer:	B		
Explanation (Optiona	l): SEE ATTAC	CHED	
Technical Reference( (Attach if not previou provided)	s): OM Reactiv	ity Management Proce	dure 3.34 step 4.1.1
Proposed references t	o be provided to ap	plicants during examination	tion:
Learning Objective:	SD86.1/2.1.09	(A	s available)
<b>Ouestion Source:</b>	Bank # Modified Bank New	(Not	e changes or attach parent)
Question History:	Last NRC Exan	m Bank: INPO 2138	4 Braidwood 2002
(Optional - Questions vali NRC; failure to provide th	dated at the facility sind the information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous review by the very question)
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knowlec ension or Analysis	lge <u>1-P</u>
10 CFR Part 55 Conte	ent: 55.41 _	X	
	55.43		
K/A Statement: Abilit	y to direct personnel	activities in the control roo	om

ES-401 Wri	tten Examination (	Question Worksheet	Forr	n-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 3 2.1.3 3.6	SRO 39
Proposed Question:	RO# 68, SEI	E ATTACHED		
Proposed Answer: Explanation (Optional Technical Reference(s (Attach if not previous provided)	B           SEE ATTAC           ):         NP 2.1.1 Constraints           ):         NP 2.1.1 Constraints           ):         STPT 15.1 T	CHED nduct Of Operations so Furbine Trips, Alarms	ection 4.1.2, and AMSAC	
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	SD86.1/2.1.39	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	(Not	te changes or at	tach parent)
Question History:	Last NRC Exan	<b>Bank: NEW</b>		
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous re every question)	view by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	dge <b>1-I</b>	
10 CFR Part 55 Conten	nt: 55.4155.43	x x		

K/A Statement: Knowledge of conservative decision making practices

ES-401 Wr	itten Examination (	Question Worksheet	Form-401-5
Examination Outline (	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       3
Proposed Question:	RO# 69, SEE	E ATTACHED	
Proposed Answer:	<u> </u>		
Explanation (Optional	): SEE ATTAC	CHED	
Technical Reference(s (Attach if not previous provided)	TS 3.4.6 RC (5): TS 3.4.6 RC (5): Sly	S Loops - Mode 4 LC S Loops Bases.	O notes,
Proposed references to	be provided to an	nlicants during examin	ation
Learning Objective:	LP3339/001	(	As available)
Ouestion Source:	Bank # Modified Bank New	(No	ote changes or attach parent)
Question History:	Last NRC Exan	<b>Bank: NEW</b>	
(Optional - Questions valid NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally und essitate a detailed review of	ergo less rigorous review by the every question)
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowle ension or Analysis	edge <u>1-P</u>
10 CFR Part 55 Conte	nt: 55.41	X	
	55.43	X	
K/A Statement: Ability	to apply Technical	Specifications for a syste	em

ES-401 Written I	Examination (	Question Worksheet	Form-401-5
Examination Outline Cross-	-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       3
Proposed Question:	RO# 70, SEE	ATTACHED	
Proposed Answer: Explanation (Optional): Technical Reference(s): (Attach if not previously provided)	B SEE ATTAC FP-G-DOC- FP-G-DOC- NP 1 1 4 Use	HED 04 Procedure Processi 03 Procedure Use and and Adherence of Pro-	ng Adherence ocedures and Work Plans
Proposed references to be p	rovided to app	plicants during examina	tion:
Learning Objective: SI	086.2/2.2.06	(A	as available)
Ouestion Source: Ba M No	ank # odified Bank ew	PBNP BANK (Not	te changes or attach parent)
Question History: La	st NRC Exam	Bank: PBNP ADN	AIN Bank
(Optional - Questions validated a NRC; failure to provide the infor	t the facility sinc mation will nece	e 10/95 will generally under ssitate a detailed review of e	go less rigorous review by the every question)
Question Cognitive Level:	Memory o Comprehe	r Fundamental Knowled nsion or Analysis	dge <u>1-P</u>
10 CFR Part 55 Content:	55.41	X	
	55.43	X	

K/A Statement: Knowledge of the process for making changes to procedures

ES-401 Wri	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 3 2.3. 3.2	SRO 
Proposed Question:	RO# 71, SEE	E ATTACHED		
Proposed Answer: Explanation (Optional Technical Reference(s (Attach if not previous	C SEE ATTAC ): NP 4.2.14 Add sly procedure, PRE 4123 A	CHED dministrative Dose L dministrative Dose J	evel/Dose Level	Extension
Proposed references to	be provided to ap	plicants during examin	nation:	
Learning Objective:	SD86.3/2.3.04		(As available)	
Ouestion Source:	Bank # Modified Bank New	MODIFIED	(Note changes or	attach parent)
Question History:	Last NRC Exan	<b>Bank: Point Bea</b>	ach 2003 - MOD	IFIED
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally une essitate a detailed review o	dergo less rigorous r f every question)	eview by the
Question Cognitive Le	evel: Memory of Comprehe	or Fundamental Know ension or Analysis x	ledge <u>1-P</u>	-
TO CITE I art 55 Colle	55.43	X		

K/A Statement: Knowledge of radiation exposure limits under normal or emergency conditions

ES-401 Wri	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 3 2.3. 2.9	SRO 
Proposed Question:	RO# 72, SEF	E ATTACHED		
Proposed Answer:	C			
Explanation (Optional	SEE ATTAC	CHED		
	NP 4.2.27 Pc	ersonnel Exposure Mon	itoring Devic	e Minimum
Technical Reference(s (Attach if not previous provided) Proposed references to	s): <u>Requiremen</u> sly b be provided to app	nts and General Use sect	tion 4.6	
Technical Reference(s (Attach if not previous provided) Proposed references to Learning Objective:	s): <u>Requiremen</u> sly be provided to app <u>SD86.3/2.3.05</u>	plicants during examinat	ion:s available)	
Technical Reference(s (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source:	s): <u>Requiremen</u> sly be provided to ap <u>SD86.3/2.3.05</u> Bank # Modified Bank New	plicants during examinat (A PBNP BANK (Note	tion 4.6 ion: s available) e changes or at	ttach parent)
Technical Reference(s (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source:	s): <u>Requiremen</u> sly be provided to ap <u>SD86.3/2.3.05</u> Bank # Modified Bank New Last NRC Exan	plicants during examinat (A: <u>PBNP BANK</u> (Note n <u>Bank: PBNP Adm</u>	tion 4.6 ion: s available) e changes or at in Bank	ttach parent)
Technical Reference(s (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the	s): <u>Requiremen</u> sly b be provided to ap <u>SD86.3/2.3.05</u> Bank # Modified Bank New Last NRC Exan lated at the facility since e information will nece	plicants during examinat (A: (A: (Note	tion 4.6 ion: s available) e changes or at <u>in Bank</u> go less rigorous revery question)	ttach parent)
Technical Reference(s (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Learning	s): <u>Requiremen</u> sly be provided to ap <u>SD86.3/2.3.05</u> Bank # Modified Bank New Last NRC Exan lated at the facility sind e information will nece evel: Memory of Comprehe	plicants during examinat plicants during examinat (A. PBNP BANK (Note n Bank: PBNP Adm ce 10/95 will generally undergessitate a detailed review of even for Fundamental Knowled ension or Analysis	tion 4.6 ion: s available) e changes or at in Bank go less rigorous ravery question) lge lge	ttach parent)
Technical Reference(s (Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Lea 10 CFR Part 55 Contex	s): <u>Requiremen</u> sly be provided to app <u>SD86.3/2.3.05</u> Bank # Modified Bank New Last NRC Exan lated at the facility since e information will nece evel: Memory of Comprehe nt: 55.41	plicants during examinat plicants during examinat (A. PBNP BANK (Note m Bank: PBNP Adm ce 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowled ension or Analysis x	tion 4.6 ion:	ttach parent) eview by the

K/A Statement: Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.
ES-401 Wr	itten Examination	Examination Question Worksheet		Form-401-5	
Examination Outline (	Cross-reference:	Level Tier # Group # K/A # Importance Rating	$ \begin{array}{r}     \text{RO} \\     3 \\     \hline     \hline     2.3. \\     3.2 \\   \end{array} $	SRO 12	
Proposed Question:	RO# 73, SEI	E ATTACHED			
Proposed Answer:	<u> </u>				
Explanation (Optional	): SEE ATTAC	CHED			
Technical Reference(s (Attach if not previous provided) Proposed references to	0-SOP-FH-( or New Fuel sly	001 Fuel/Insert/Com	ponent Movemer	nt in the SFP	
Learning Objective:	LP0260/0001		(As available)		
Ouestion Source:	Bank # Modified Bank New	() NEW	Note changes or at	tach parent)	
Question History:	Last NRC Exan	m Bank: NEW			
(Optional - Questions value NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally un essitate a detailed review of	dergo less rigorous re of every question)	eview by the	
Question Cognitive Level: Memory of Comprehe		or Fundamental Know ension or Analysis	vledge <u>1-B</u>		
10 CFR Part 55 Conte	nt: 55.41 _	x			
K/A Statement: Know	edge of radiological	safety principles pertai	ning to licensed on	erator duties	

K/A Statement: 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.

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ES-401 V	Written Examination (	Question Worksheet	Form-401-5	
Examination Outlin	e Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO     SRO       3	
Proposed Question:	RO# 74, SEI	E ATTACHED		
Proposed Answer: Explanation (Option	C SEE ATTAC	CHED		
	SED 1 1 Alf	ernate Core Cooling		
Technical Referenc (Attach if not previe provided)	e(s): SEF 1.1 Alle	rliaanta during ayaminat		
Technical Reference (Attach if not previo provided) Proposed references	s to be provided to ap	plicants during examinat	ion:	
Technical Reference (Attach if not previe provided) Proposed references Learning Objective Question Source:	s to be provided to ap <b>LP2189/004</b> Bank # Modified Bank New	plicants during examination (As	ion: s available) <b>X</b> e changes or attach parent)	
Technical Reference (Attach if not previous provided) Proposed references Learning Objective Question Source: Question History:	s to be provided to ap <b>LP2189/004</b> Bank # Modified Bank New Last NRC Exan	plicants during examination (Astronomy Contents) (Astronomy Contents) (Note on the content of th	ion: s available) K e changes or attach parent) a <b>2003</b>	
Technical Reference (Attach if not previe provided) Proposed references Learning Objective Ouestion Source: Question History: (Optional - Questions v NRC; failure to provide	e(s): SEP 1.1 And busly s to be provided to ap : LP2189/004 Bank # Modified Bank New Last NRC Exan alidated at the facility sind the information will nece	plicants during examination (As	ion: s available) <b>X</b> e changes or attach parent) a <b>2003</b> go less rigorous review by the yery question)	
Technical Reference (Attach if not previe provided) Proposed references Learning Objective Ouestion Source: Question History: (Optional - Questions v NRC; failure to provide Question Cognitive	e(s): SEP 1.1 And busly s to be provided to app : LP2189/004 Bank # Modified Bank New Last NRC Exan alidated at the facility sind the information will nece Level: Memory of Comprehe	plicants during examination (Astronomic of the content of the cont	ion: s available) <b>X</b> e changes or attach parent) a <b>2003</b> go less rigorous review by the very question) ge	
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K/A Statement: Knowledge of low power/shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.

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ES-401 Writ	tten Examination (	Question Worksheet	Form-401-5	
Examination Outline Cross-reference:		Level Tier # Group # K/A # Importance Rating	RO         SRO           3	
Proposed Question:	RO# 75, SEE	E ATTACHED		
Proposed Answer:	B			
Explanation (Optional)	: SEE ATTAC	HED		
SEP 1 DegrTechnical Reference(s): (Attach if not previously provided)		ded RHR System Cap	ability Unit 1 Attachment	
Technical Reference(s) (Attach if not previous) provided)	): <u>C (Given)</u> ly			
Technical Reference(s) (Attach if not previousl provided) Proposed references to examination:	b: <u>C (Given)</u> ly be provided to app	plicants during	SEP 1 Attachment C	
Technical Reference(s) (Attach if not previousl provided) Proposed references to examination: Learning Objective:	C (Given) ly be provided to app LP2189/008	plicants during	SEP 1 Attachment C	
Technical Reference(s) (Attach if not previousl provided) Proposed references to examination: Learning Objective: Question Source:	er C (Given) ly be provided to app LP2189/008 Bank # Modified Bank New	plicants during (A (Not (Not	SEP 1 Attachment C As available) te changes or attach parent)	
Technical Reference(s) (Attach if not previous) provided) Proposed references to examination: Learning Objective: Question Source: Question History:	e provided to app be provided to app <b>LP2189/008</b> Bank # Modified Bank New Last NRC Exam	olicants during (A (Not NEW ) Bank: NEW	SEP 1 Attachment C As available) te changes or attach parent)	
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Technical Reference(s) (Attach if not previous) provided) Proposed references to examination: Learning Objective: Ouestion Source: Question History: (Optional - Questions valid: NRC; failure to provide the Question Cognitive Lea 10 CFR Part 55 Conter	error (Given) ly be provided to app LP2189/008 Bank # Modified Bank New Last NRC Examated at the facility since information will nece vel: Memory of Comprehere ht: 55.41	plicants during (A (Not NEW Bank: NEW Bank: NEW Consistants a detailed review of e r Fundamental Knowled nsion or Analysis X	SEP 1 Attachment C As available) te changes or attach parent) rgo less rigorous review by the every question) dge	

K/A Statement: Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.

Given the following plant conditions:

- Unit 1 startup is in progress with reactor power at 6% and stable.
- All systems are in a normal lineup with no equipment out of service.
- Procedure in effect is OP 1C, "Startup to Power Operation Unit 1."
- As the Unit 1 Control Operator moves rods out one step to continue the power ascension, control rods continue to step out.
- Rod movement is terminated by the Control Operator by manually tripping the reactor.
- Just prior to the manual trip, reactor power is noted to be 22%.
- EOP 0, "Reactor Trip or Safety Injection," is entered.

Which of the following is correct regarding these events?

- A. An automatic reactor trip should have occurred since the Low Power Range Trip was **not** blocked and exceeded its reactor trip setpoint.
- B. An automatic reactor trip should <u>**not**</u> have occurred since the Low Power Range Trip was automatically blocked when power went above the P-10 interlock.
- C. An automatic reactor trip should have occurred since the "At-Power Trips" were enabled when power went above the P-7 interlock.
- D. An automatic reactor trip should have occurred since the Intermediate Range Trip was **not** blocked and exceeded its reactor trip setpoint.

- A: Correct. Low power trip setpoint is 20%, and was not manually bypassed.
- B: Incorrect. Power did go above P-10 (8%) but the trip must be manually bypassed.
- C: Incorrect. Power did go above P-7 (9.5%) but the Low Power trip is not affected by the P-7 interlock.
- D: Incorrect. Intermediate range trip setpoint is ~25%

With the RCS at normal operating pressure and temperature, what is the condition of the steam INITIALLY entering the PRT if a PORV opens?

(PRT is at 100°F, 5 psig: assume an ideal thermodynamic process.)

- A. Saturated steam-water mixture at 212°F.
- B. Saturated steam-water mixture at 228°F.
- C. Superheated steam at 327°F.
- D. Superheated steam at 668°F.

- A: Incorrect. Temperature is saturation for atmospheric pressure; the PRT is at 20 psia
- B: Correct
- C: Incorrect. Temperature is saturation for 100 pounds absolute, which could be misread from the Mollier by looking for the 100°F temperature line.
- D: Incorrect. Temperature relates to 2250 pounds absolute, the starting point for the process.

The following plant conditions exist:

- A SBLOCA has occurred
- The reactor has tripped from 100% power with maximum decay heat
- ECCS is operating as designed
- The RCS is saturated with RCS pressure above steam generator pressure

Which of the following components is required to maintain core cooling?

- A. Reactor coolant pumps
- B. Accumulators
- C. Steam generators
- D. Charging pumps

- A: Incorrect. RCPs may be tripped for SBLOCA and are not required for cooldown.
- B: Incorrect. With RCS pressure above S/G pressure, the accumulators would not be able to inject
- C: Correct. With RCS pressure above the S/G pressure they are used for the cooldown.
- D: Incorrect. Charging pumps are used to maintain primary inventory but are not required for recovery (BG step 5)

The unit has experienced a large break LOCA 30 minutes ago. The crew entered CSP-P.1 "Response to Imminent Pressurized Thermal Shock" and the first step had them return to procedure step in effect.

Why is CSP-P.1 not performed for a large break LOCA?

- A. The SI pumps are required to be available for injection.
- B. Pressurized thermal shock is not a serious concern during large break LOCA's.
- C. The RWST water used for injection limits thermal stress on the reactor vessel.
- D. Pressurized thermal shock is not addressed until low head sump recirculation is established.

- A: Incorrect. If the RHR pumps were not available CSP-P.1 would be performed.
- B: Correct. PTS is not a concern with a large break LOCA because high pressure is not present at the same time as cold temperatures.
- C: Incorrect. RWST temperature limits are based on max containment pressure and having adequate cooling in a LOCA, not on PTS concerns.
- D: Incorrect. As long as the RHR pumps can inject CSP-P.1 is not performed.

Unit 1 CVCS is in a normal at power alignment with 2 charging pumps operating and 1 40 gpm Letdown orifice in service.

1P-2A, "Charging Pump" is in AUTO with 1P-2B, "Charging Pump" in MANUAL.

The following conditions are then noted:

-Unit 1 Pressurizer level is decreasing slowly

-VCT level is rising

-RCP seal injection flow is 6.9 gpm per RCP

- -1P-2A Charging Pump controller output is 100%
- -1P-2B Charging Pump controller output is 20%

The following alarms are received:

- CHARGING PUMP SPEED CONTROL TROUBLE
- 1P-1A or B RCP LABYR SEAL  $\triangle$  P LOW

Which of the following has occurred?

- A. 1P-2A, "Charging Pump" varidrive failed to minimum speed.
- B. 1P-2B, "Charging Pump" VFD failed to maximum speed.
- C. Controlling Pressurizer Level channel failed LOW.
- D. Seal Injection Line has developed a leak.

- A: Correct. Speed trouble alarm comes in when auto charging pump is at min or max speed.
- B: Incorrect. Do not get the High/Low speed alarm with manual pump
- C: Incorrect.1P-2A would speed up and cause a rising pressurizer level, lowering VCT level, and higher seal injection flow
- D: Incorrect. 1P-2A would speed up and have a lowering VCT level

Given the following conditions for Unit 2:

- The unit is in MODE 4 on RHR
- RCS Temperature 320°F and stable
- RCS pressure 300 psig lowering
- PZR level 22% lowering
- Sump A level is 24% and rising
- Both RCP's are running

Which of the following would cause these indications?

- A. A leak in one of the RHR HXs
- B. The Letdown Relief Valve lifting
- C. A leak in the RCP seal return HX
- D. A leak from the RHR suction header relief valve

- A: Incorrect. RHR HX's are outside containment, a leak could lower pressurizer level but not raise sump level.
- B: Incorrect. Letdown Relief Valve lifting could cause Pressurizer level and RCS pressure to lower, but the water would be contained in the PRT.
- C: Incorrect. Seal return HX's are outside containment, a leak could lower VCT level but not raise sump level.
- D: Correct. The valve is inside containment and the given indications are consistent with a leak.

Given the following sequence:

- Unit 1 is operating at 100% power.
- CCW is in a normal at power configuration
- A Unit 1 reactor trip occurs
- Offsite power is lost to both Unit 1 safeguards buses
- 1A05 4160 KV and 1B03 480 VAC Safeguards busses are subsequently reenergized by an emergency diesel generator

CCW pump indications are as follows:

- 'A' CCW pump control switch in AUTO with a RED flag and a RED breaker indicating light
- 'B' CCW pump control switch in AUTO with a GREEN flag and a RED breaker indicating light

With no operator action, what is the CCW pump configuration after the transient?

- A. Both OFF
- B. Both RUNNING
- C. 'A' RUNNING 'B' OFF
- D. 'A' OFF 'B' RUNNING

- A: Incorrect. CCW breakers ride the bus on a UV alone so previously running pump would start. Still have DC control power for 480 Vac busses.
- B: Incorrect. The breaker lights indicate shut but only 1 bus is energized so both pumps are NOT running. Still have DC control power for 480 Vac busses.
- C: Correct. 'A' pump will ride the bus and start when power restored. Breaker for 'B' pump will shut on low CCW header pressure but not run. Still have DC control power for 480 Vac busses.
- D: Incorrect. 'A' pump will stop operating due to loss of power and restart. 'B' pump does not have power available but breaker is closed due to low CCW header pressure. Still have DC control power for 480 Vac busses.

Given the following plant conditions:

- Unit 1 is operating at 28% power.
- Normal Letdown has been secured for maintenance.
- Excess Letdown is in service with one Charging Pump running in manual at minimum speed per OP 5E, "Establishing and Securing Excess Letdown."
- Charging and Excess Letdown flow have been balanced and Pressurizer level is stable.
- -All other equipment is in a normal alignment.
- -No other equipment is out of service.

1LT 428, "Pressurizer Level", Blue channel, fails low.

Assuming no operator action, what effect will this transmitter failure have on the actual primary parameters?

A. Pressurizer pressure lowers.

Pressurizer saturation temperature lowers.

B. Pressurizer pressure rises.

Pressurizer saturation temperature rises.

C. RCS subcooling rises.

Pressurizer saturation temperature lowers.

D. RCS subcooling lowers.

Pressurizer saturation temperature rises.

- A: Correct. Pressurizer heaters will lockout on low level, pressure will lower, lowering sat temp.
- B: Incorrect. Correct relationship between saturation temp and pressure but pressure would lower not rise.
- C: Incorrect. Subcooling will lower as pressure lowers.
- D: Incorrect. Saturation temperature will lower with pressure.

An automatic reactor trip and SI have occurred from 100% power. EOP 0, "Reactor Trip or Safety Injection", has just been implemented.

The following are observed:

- A Reactor Trip Breaker (RTA) is OPEN
- B Reactor Trip Breaker (RTB) is CLOSED
- Both bypass breakers are racked out
- Reactor power is decreasing in the intermediate range, with SUR at -0.3 dpm
- All rods are fully INSERTED, and rod bottom lights LIT

A manual trip of the reactor was performed; however the "B" Reactor Trip Breaker is still CLOSED.

What action is required to be taken next?

- A. De-energize 480V busses B-01 and B-02 in order to de-energize the Rod Drive MG sets.
- B. Transition to CSP-S.1, "Response to Nuclear Power Generation/ATWS."
- C. Continue with EOP 0, Step 2.
- D. Initiate emergency boration.

- A: Incorrect. Only de-energize MG Sets if both trip breakers closed with reactor not tripped.
- B: Incorrect. Reactor is tripped per provided indications.
- C: Correct. The reactor is tripped with the given indications and the RO continues on with EOP 0.
- D: Incorrect. Emergency boration completed if all rods not dropped or in CSP S.1

Unit 1 has experienced a SGTR and the crew has entered the appropriate EOP. The crew has commenced cooldown to target temperature when a short time later Reactor Coolant Pump trip criteria is met.

Which of the following actions must be taken and why?

- A. Trip the Reactor Coolant Pumps to minimize the potential for RCP damage when an RCS depressurization is initiated.
- B. Trip the Reactor Coolant Pump on the affected loop to minimize RCS inventory loss.
- C. Keep the Reactor Coolant Pumps running to prevent the automatic opening of a S/G Atmospheric.
- D. Keep the Reactor Coolant Pumps running because an operator controlled cooldown is in progress.

- A: Incorrect. Do not secure RCP's in EOP 3 when starting a cooldown. Plausible due to the lowering pressure and normally securing RCP's in this condition.
- B: Incorrect. Tripping RCP's for inventory loss is done for other accidents such as SBLOCA.
- C: Incorrect. Keeping the pumps running is correct, but for the wrong reason. Lifting of an atmospheric is of concern during a SGTR after 30 minutes.
- D: Correct. Per the note prior to Step 11.

The crew is responding to a loss of main feedwater and reactor trip on Unit 1. The turbine driven and both motor driven AFW pumps started on low SG water levels.

1TR-2000B Plant Thermocouple Temperature Recorder point is in alarm for 1P-29, "Turbine Driven AFW pump". The inboard turbine bearing temperature is 260°F and rising.

Which is the FIRST action the crew will take?

- A. Vent the TDAFW pump casing.
- B. Throttle 1AF-4000 and 4001 AFW pump discharge S/G inlet valves open.
- C. Open FP-243 emergency AFW seal water supply from fire water.
- D. Secure 1P-29 Turbine Driven AFW Pump.

- A: Incorrect. This action is taken for steam binding of a secured pump
- B: Incorrect. Increasing AFW flow will not provide more cooling to the turbine bearing.
- C: Incorrect. Fire protection water is normally already aligned to supply seal water via a pressure regulator
- D: Correct. Action per ARB if bearing temperature exceeds 250°F

Both Units are at full power with a normal electrical line up when 1X04 "Auxiliary Transformer" locks out. Emergency Diesel Generators G01 and G03 failed to automatically start.

Prior to any Operator action, Unit 1 inadvertently trips due to a main generator malfunction.

What is the status of the Unit 1 Rod Bottom lights and why?

- A. LIT due to being powered from an Instrument Bus.
- B. LIT due to the safeguards 480 vac power supply.
- C. NOT LIT due to the EDG failures.
- D. NOT LIT due to the non-safeguards power supply.

- A: Incorrect. Instrument power would not be affected by loss of 1X04 and diesels but rod bottom lights not powered by instrument bus.
- B: Incorrect. Correct power supply but it is lost with the EDG failure.
- C: Correct. Feed to 1Y06 is dead with no EDG.
- D: Incorrect. 1Y06 is powered from safeguards.

Unit 2 is at RTP and all LCO's are currently met when the following occurs.

2DY03, "120 VAC White Instrument Inverter", experiences a fault and instrument buses 2Y-03 and 2Y-103 are automatically transferred to the backup power supply.

Several minutes later 2DY04, "120 VAC Yellow Instrument Inverter" experiences a fault and fails.

What is the status of the following LCOs for Unit 2?

LCO 3.8.7 Inverters-Operating LCO 3.8.9 Distribution Systems-Operating

- A. Both LCO 3.8.7 and LCO 3.8.9 are **met**.
- B. LCO 3.8.7 is met. LCO 3.8.9 is not met.
- C. LCO 3.8.7 is **not met**. LCO 3.8.9 is **met**.
- D. Both LCO 3.8.7 and LCO 3.8.9 are **not** met.

- A: Incorrect. LCO 3.8.7 requires the instrument bus to be powered from the inverter. Neither 2DY-03 or 2DY-04 are powering their instrument busses. LCO 3.8.9 requires the instrument bus to have proper voltage. Instrument Busses 2Y04 and 2Y104 are deenergized due to an electrical interlock. 2Y03 and 2Y103 White instrument busses are powered but from an non-class 1E source.
- B: Incorrect. Neither 2DY-03 or 2DY-04 are powering an instrument bus.
- C: Incorrect. 2Y04 and 2Y104 are not energized from an inverter due to an interlock.
- D: Correct. Instrument bus is not energized.

Instrument Air is reestablished to containment in the EOP set to regain control of which of the following pieces of equipment?

- A. Excess Letdown Isolation valve CV-1299 for Pressurizer level control.
- B. PORV's for Pressurizer pressure control.
- C. PRT Sparging valve to quench fluid from the Pressurizer PORV's and Safeties.
- D. Reactor Head Vent System to vent steam voids in the upper head region.

- A: Incorrect. Normal letdown isolations are AOV's, excess letdown is potentially used in emergency conditions but the isolation CV-1299 is an MOV.
- B: Correct. PORV's use IA for operation; their nitrogen backup is isolated at power.
- C: Incorrect. PRT sparging valve is an AOV, but is not used in the EOP set.
- D: Incorrect. This system is used in some events, but the valves are solenoid operated.

Which of the following systems is considered to be the most likely location for a rupture or break outside containment, which would require implementation of ECA 1.2, "LOCA Outside Containment"?

- A. Safety Injection
- B. Residual Heat Removal
- C. Component Cooling
- D. RCS Hot Leg Sample line

- A. Incorrect. Safety Injection is connected to the RCS
- B: Correct. ECA 1.2 bases steps 4 and 5 explain the most probable leak location is RHR.
- C: Incorrect. CCW is plausible because it is a lower pressure rated system that is located outside containment.
- D: Incorrect. RCS Hot Leg Sample interfaces with the RCS and has piping located outside containment. This line is only 1" and would not result in ECA entry.

Given the following:

- Unit 1 has tripped from 100% power due to a Loss of Coolant Accident (LOCA) with a loss of Offsite Power.
- B RHR Pump is danger tagged out
- **G01** and **G02** Emergency Diesel Generators have failed to start.

The Operators are performing EOP 1, "Loss of Reactor or Secondary Coolant."

- RCS pressure is 700 psig.
- Both S/G pressures are stable at 900 psig.
- RWST level is 80% and lowering slowly
- Containment pressure peaked at 10 psig and is decreasing.
- All other equipment is operating normally.

Which of the following procedures will be utilized to address these conditions?

- A. EOP 1.3, "Transfer to Containment Sump Recirculation Low head Injection"
- B. EOP 1.2, "Small Break LOCA Cooldown and Depressurization"
- C. ECA 1.1, "Loss of Containment Sump Recirculation"
- D. ECA 0.0, "Loss of All AC Power"

- A: Incorrect. Transition to EOP 1.3 is based on RWST level of <60%.
- B: Incorrect. Transition to EOP-1.2 is required if sump recirc available
- C: Correct. No train of RHR is available.
- D: Incorrect. Transition to ECA-0.0 is not required because 'B' train safeguards power is available from G-03

You are responding to a loss of feedwater on Unit 2 caused by a main feed line rupture outside of Containment. You are currently performing CSP-H.1, "Response to Loss of Secondary Heat Sink."

The following conditions exist on Unit 2:

- SG 'A' level 9	5" WR and lowering
- SG 'B' level 9	0" WR and lowering
- Loop 'A' Hot Leg temperature 5	570°F and rising
- Loop 'B' Hot Leg temperature 5	571°F and rising
- Loop 'A' Cold Leg temperature 5	50°F and stable
- Loop 'B' Cold Leg temperature 5	50°F and stable
- RCS pressure 2	340 psig
- 2RC-430, PORV	OPENING
- Both RCPs N	lot running

Based on the above indications, the next actions you would take are:

- A. Attempt to establish AFW flow to maintain the secondary heat sink.
- B. Initiate RCS Bleed-and-Feed to provide core cooling.
- C. Shut the PORV or its block valve to maintain RCS inventory.
- D. Attempt to start at least one RCP to stabilize RCS temperature and pressure.

- A: Correct. AFW should be restored to recover S/G level.
- B: Incorrect. For these conditions a delta-T exists and the S/G are removing heat. Feed and bleed not required until S/G no longer removing heat.
- C: Incorrect. The PORV is operating correctly to limit system pressure.
- D: Incorrect. RCPs were secured to limit additional heat input.

Both units are operating at 100% when a grid disturbance results in the following conditions:

- MVAR's have lowered to -10
- Voltage Regulator control is in AUTOMATIC

MVARs must be adjusted by \_\_\_\_\_?

- A. lowering AC adjuster.
- B. raising the AC adjuster.
- C. raising the DC adjuster.
- D. lowering the DC adjuster.

- A: Incorrect. Correct controls wrong direction
- B: Correct.
- C: Incorrect. Correct answer if voltage regulator in manual control.
- D: Incorrect. Wrong controls and wrong direction

Unit 1 was operating at 100% power when one control rod dropped. Operators stabilized the unit at 90% power with Tave equal to Tref. While performing the shutdown margin verification for AOP 6A, "Dropped Rod" the Operators determine Power Defect.

The total Power Defect inserted due to the power reduction is \_\_\_\_\_\_.

(Disregard void and redistribution effects)

- A. Moderator Temperature Defect times the moderator temperature change
- B. Fuel Temperature Defect times the fuel temperature change
- C. Fuel Temperature Defect minus the Moderator Temperature Defect
- D. Moderator Temperature Defect plus the Fuel Temperature Defect

- A: Incorrect. Moderator Temperature Defect includes the temperature change.
- B: Incorrect. Fuel Temperature Defect includes the fuel temperature change.
- C: Incorrect. Wrong relationship.
- D: Correct. Power Defect is the algebraic sum of the moderator temperature and temperature defects.

Emergency boration was directed in accordance with Step 5 of CSP-S.1, "Response to Nuclear Power Generation/ATWS." The desired flowpath could not be established and the SRO directs you to borate via the blender per OP 5B, "Blender Operation/Boration/Dilution."

What will be the valve line up to accomplish this task?

- A. CV110B, "Z-1 BA Blender to Charging Pump Suction Valve", FULL OPEN, and CV-142 "Charging Flow Control Valve" THROTTLED to get the desired flow rate from the Boric Acid pump.
- B. CV110B, "Z-1 BA Blender to Charging Pump Suction Valve" FULL OPEN, and CV-110A, "BA to Z-1 Blender Flow Control Valve" THROTTLED to get the desired flow rate from the Boric Acid pump.
- C. CV112C, "VCT Outlet Isolation to Charging Pump Suction Valve", CLOSED, and 1CV-350, "Emergency Boration BA to Charging Pump Suction Valve", FULL OPEN with maximum charging header flow.
- D. CV110C, "Z-1 BA Blender to T-4 FCV Flow Control Valve" FULL OPEN, and CV-110A, "BA to Z-1 Blender Flow Control Valve" THROTTLED to get the desired flow rate from the Boric Acid pump.

Explanation:

A: Incorrect. HCV 142 is in the flow path for boration but is not used to adjust flowrate

- B: Correct.
- C: Incorrect. This is the flowpath that was unavailable in CSP.S.1.
- D: Incorrect. This flowpath goes into the top of the VCT and used for dilution.

Why is a reactor startup suspended if an IR channel fails?

- A. The IR channels provide protection for rod bank withdrawal accidents during startup.
- B. The IR channels provide dropped rod protection during startup.
- C. The IR channels provide protection for excessive fuel rod power density during startup.
- D. The IR channels provide protection against a boron dilution during startup.

- A: Correct.
- B: Incorrect. The reactor is manually tripped for a dropped rod during startup.
- C: Incorrect. Overpower Delta T performs this function.
- D: Incorrect. SR NI's provide this function.

There has been a LOCA on Unit 2 and Radiation monitor RE-101, "Control Room Area", has gone into **HIGH** alarm.

What effect, if any, will this have on the Control Room Ventilation System?

- A. Nothing, ventilation will remain in Mode 1, Normal.
- B. Ventilation will shift to Mode 2, 100% recirculation
- C. Ventilation will shift to Mode 3, 75% recirculated and 25% filtered recirculation air
- D. Ventilation will shift to Mode 4, 75% recirculated and 25% filtered outside air

- A: Incorrect. Mode 1 is the Normal mode.
- B: Incorrect. Mode 2 is 100% recirculation initiated from Containment Isolation
- C: Incorrect. Mode 3 is 75% recirc and 25% filtered recirc initiated manually.
- D: Correct. High alarm on RE 101 will cause CR ventilation to automatically switch to Mode 4

Given the following:

- A fire was confirmed in the Cable Spreading Room that was affecting plant equipment.
- The crew is implementing AOP 10A, "Safe Shutdown Local Control."
- H01 13.8 kV bus has a lockout
- The site has a loss of offsite power

Which of the following will power the required equipment per AOP 10A?

- A. G05 Gas Turbine
- B. G03 or G04 EDG's
- C. G01 or G02 EDG's
- D. G01 or G02 EDG for Unit 1and G03 or G04 EDG for Unit 2

- A: Incorrect. This is correct for loss of offsite power and no loss of H01.
- B: Correct. This is correct for loss of offsite power and G05.
- C: Incorrect. G01 and G02 are emergency power supplies but are not used in AOP-10A.
- D: Incorrect. Only G03 or G04 are used.

Consider the following Unit 1 conditions:

- Unit 1 is at 95% reactor power.
- CBD Control rod C-7 is at 178 steps.
- Remaining Control Bank 'D' rods are at 198 steps.
- Control Room crew has entered AOP-6B, "Stuck or Misaligned Control Rod", and actions to realign the rod have been completed.
- Following the realignment of C-7 to 198 steps, the P/A converter was **NOT** set to actual bank position.
- Subsequently, a plant transient occurs and rods begin to drive in until the "Rod Insertion Limit Bank D LOW" (1C04 1A 1-11) Alarm actuates.

Relative to ACTUAL Rod Insertion Limits, at what rod height will the alarm actuate? Would this be conservative or non-conservative? Why?

- A. Alarm will actuate 10 steps ABOVE actual Rod Insertion Limit. This would be nonconservative since the alarm warning for a possible loss of Shutdown Margin would be received late.
- B. Alarm will actuate 10 steps ABOVE actual Rod Insertion Limit. This would be conservative since the alarm would provide early warning that rod position could cause Axial Flux to exceed allowable limits.
- C. Alarm will actuate 10 steps BELOW actual Rod Insertion Limit. This would be nonconservative since the alarm warning for a possible loss of Shutdown Margin would be received late.
- D. Alarm will actuate 10 steps BELOW actual Rod Insertion Limit. This would be conservative since the alarm would provide early warning that rod position could cause Axial Flux to exceed allowable limits.

- A: Incorrect. If the 20 step disagreement was added to the 10 step alarm setpoint, but it was assumed the alarm normally actuated 10 steps BELOW the RIL, this would be plausible. Shutdown margin is affected.
- B: Incorrect. If the 20 step disagreement was added to the 10 step alarm setpoint, but it was assumed the alarm normally actuated 10 steps BELOW the RIL, this would be plausible. Rod position impact on Axial Flux is plausible, since having the rods inserted too far will cause AFD issues.
- C: Correct. The realignment process would result in the P/A converter counting the bank 20 steps further out than it actually is. Without resetting,

the RIL alarms will come in 20 steps too late, 10 steps below the limit instead of 10 steps above.

D: Incorrect. If the 20 step disagreement was added to the 10 step alarm setpoint, but it was assumed the alarm normally actuated 10 steps BELOW the RIL, this would be plausible. Rod position impact on Axial Flux is plausible, since having the rods inserted too far will cause AFD issues.

Given the following plant conditions:

-Unit 1 is operating at 100% power

- -A small amount of Steam Generator tube leakage is present on both Steam Generators. However, the leakage is below the Technical Specification limit
- -A fuel cladding defect has been detected via multiple indications of rising RMS monitors
- -The severity and magnitude of the defect is being evaluated
- -An inadvertent Containment Isolation signal is generated

Which of the following radiation monitors would be expected to continue to have an increasing trend?

- A. 1RE 231, "Steam Line 'A' Monitor"
- B. 1RE 109, "Failed Fuel Monitor"
- C. 1RE 116, "Demineralizer Valve Gallery Monitor"
- D. 1RE 219, "Steam Generator Blowdown Liquid Monitor"

- A: Correct. Contaminated Steam flow continues past the monitor.
- B: Incorrect. Hot Leg sample isolates on a Containment Isolation (CI).
- C: Incorrect. Letdown isolates on a CI.
- D: Incorrect. S/G B/D isolates on a CI.

Given the following conditions:

- The reactor has tripped from 100% near BOL.
- A loss of offsite power subsequently occurs.
- Control rod shroud fans are not running
- The operating crew has transitioned to EOP 0.2, "Natural Circulation Cooldown."
- The pressurizer and RCS hot leg are sampled for boron and SDM is calculated to be 0.8%  $\Delta k/k$ .

Which of the following is correct concerning reactor plant cooldown?

- A. SDM is adequate, the cooldown can commence at 25°F/hr.
- B. SDM is adequate, the cooldown can commence at 50°F/hr.
- C. SDM is <u>not</u> adequate, additional boration is required before the cooldown can begin.
- D. SDM is <u>not</u> adequate, cooldown can commence at 25°F/hr and additional boration is required to be initiated when RHR is placed in service.

- A: Incorrect. Cooldown rate is correct but SDM is not adequate.
- B: Incorrect. Cooldown rate is incorrect and SDM is not adequate.
- C: Correct. Step 5 of EOP 0.2 requires a SDM of 1% before cooldown can commence.
- D: Incorrect. Cooldown can not commence before boration

Unit 2 is in Mode 5 Cold Shutdown with the RCS depressurized.

Both PORVs will be isolated for maintenance.

Regarding LTOP requirements, which of the following is an acceptable vent path?

- A. All S/G handhole covers removed
- B. Pressurizer manway removed
- C. Pressurizer solenoid vent valve open to containment
- D. Reactor vessel head vent valve open to PRT

- A: Incorrect. A vent path for the secondary side of the S/G.
- B: Correct. Identified in the LCO basis as an acceptable vent path.
- C: Incorrect. A primary system vent path, but not sufficient for the LTOP LCO.
- D: Incorrect. A primary system vent path, but not sufficient for the LTOP LCO.

The unit is operating at full power with the following stable initial conditions:

- Pressurizer level is 45.6%
- Charging line flow is 29.5 gpm
- VCT level is 53%
- Lab seal DP is 39" and 41" for RCP A and B

30 minutes later the following conditions are noted with **no** operator action:

- Pressurizer level is 45.6%
- Charging line flow is 31 gpm
- VCT level is 53%
- Lab seal DP is 31" and 33" for RCP A and B

Which of the following is occurring?

- A. Seal injection filter plugging
- B. Leak on the seal injection line
- C. Charging pump relief leaking by
- D. Leak on the seal return line

- A: Correct
- B: Incorrect. Both charging flow and seal DP would lower
- C: Incorrect. Both charging flow and seal DP would lower and VCT level would rise.
- D: Incorrect. Lab seal DP would be constant and VCT level would lower.

29. ILT 2009 RO 29 Given the following:

- Unit 2 is at full power with Xenon at equilibrium
- Tavg is 569°F
- Time in core life is 4930 MWD/MTU
- Current boron concentration is 1160 ppm
- LDGS is Online

Using ROD 6.6, 8.6 and the Blender book, calculate the amount of dilution required to raise Tavg to 570°F

- A. 13.4 gal
- B. 16.8 gal
- C. 32.6 gal
- D. 79.5 gal

- A: Incorrect Divide instead of multiply for final step
- B: Incorrect. Multiply by boric acid/ppm instead of RMUW/ppm
- C: Incorrect. RMUW for 1 ppm change not 1°F change
- D: Correct

Why does SEP 1, "Degraded RHR System Capability" establish a reactor vessel level of greater than 22%?

- A. To ensure capability for establishing reflux cooling.
- B. To ensure adequate coolant level for stable RHR pump operation.
- C. To extend time to boil, which allows time for the RHR suction line to be reflooded.
- D. To minimize thermal stress on the reactor vessel before initiating alternate core cooling.

- A: Incorrect. Plausible because reflux cooling is a emergency method of decay heat removal.
- B: Correct. 22% level is considered the minimum for stable RHR suction
- C: Incorrect. Plausible because reflooding RHR suction line is a strategy in the procedure.
- D: Incorrect. Plausible because thermal stress on the vessel is a concern under certain conditions.

Given the following:

- A large break LOCA has occurred on Unit 2.
- 480 volt Safeguards Bus 2B04 is locked out.
- The crew is performing actions of EOP 1, "Loss of Reactor or Secondary Coolant."
- Conditions are met to isolate the SI Accumulators.

What actions are required to isolate the accumulators?

- A. Dispatch an operator to energize one of the SI Accumulator outlet valves from safeguards power and then manually close that accumulator outlet valve. The other accumulator cannot be vented to containment.
- B. Dispatch an operator to energize one of the SI Accumulator outlet valves from safeguards power and then manually close that accumulator outlet valve. The other accumulator is vented to containment.
- C. Dispatch an operator to energize both SI Accumulator outlet valves via B08/B09 Alternate Shutdown Load Center, and then manually close both accumulator outlet valves. Both accumulators must be vented to containment.
- D. Dispatch an operator to energize one of the SI Accumulator outlet valves from safeguards power and the other from B08/09 Alternate Shutdown Load Center, then manually close both accumulator outlet valves.

- A: Incorrect. The A accumulator MOV will be able to be energized and shut from Control. B accumulator will be able to be vented.
- B: Correct. One accumulator can be isolated and the other must be vented to containment.
- C: Incorrect. Accumulators do not have any back-up power supplies and would not be vented once isolated.
- D: Incorrect. Plausible because safeguards power can operate the 'A' isolation valve but accumulators do not have any back-up power supplies.

Unit 2 is recovering from a refueling outage and is currently in Mode 5. Reactor Coolant System fill and vent is in progress per OP 4A, "Filling and Venting Reactor Coolant System."

Per OP 4A, what indication is used to confirm the reactor vessel is full?

- A. A rising level in the Reactor Coolant Drain Tank (RCDT).
- B. RVLIS indication 100% and flat lining.
- C. A rising level in the Pressurizer Relief Tank (PRT).
- D. A rising Pressurizer level

Explanation:

- A: Incorrect RCDT is another common waste water tank in containment
- B: Incorrect, RVLIS is used for trending and should be <100%

C: Correct,

D: Incorrect, pressurizer level will rise prior to Rx vessel being full
TCV-130, "Component Cooling Water Return from the Non-Regenerative Heat Exchanger Temperature Control Valve", fails due to a broken air line.

Assuming no action by the crew, which of the following describes the effect of this failure on the plant?

- A. Letdown temperature goes down; the decrease in letdown temperature causes the letdown demineralizers to remove more boron, resulting in a minor dilution.
- B. Letdown temperature goes up; the rise in letdown temperature causes the letdown demineralizers to remove more boron, resulting in a minor dilution.
- C. Letdown temperature goes up; the rise in letdown temperature causes the letdown demineralizers to remove less boron, resulting in a minor boration.
- D. Letdown temperature goes down; the decrease in letdown temperature causes the letdown demineralizers to remove less boron, resulting in a minor boration.

- A. Correct. Temp goes down due to valve failing open and colder letdown causes more boron to be removed
- B. Incorrect. Temp goes down
- C. Incorrect. Higher temperatures would result in less boron being removed but Temp goes down
- D. Incorrect. No boration with boron removal

Which of the following describes why the pressurizer spray valves have a continuous bypass flow design feature?

- A. Prevents spray nozzle from experiencing severe thermal shock upon initiation of spray flow.
- B. Allows variable heaters to be continuously energized to improve chemical mixing in the pressurizer
- C. Prevents thermal binding of the spray valves.
- D. Provides for backup pressure control if spray valves failed closed on loss of instrument air

- A: Correct
- B: Incorrect; variable heaters are not normally continuously energized
- C: Incorrect; spray valves are designed to operate under varying temperatures.
- D: Incorrect; spray valves have a nitrogen backup

Which of the following describes the type of core protection afforded by the Reactor Protection System Overtemperature  $\Delta T$  trip?

- A. Departure from nucleate boiling
- B. Peak power density
- C. Total core power
- D. KW per linear foot
- Explanation:
- A: Correct
- B: Incorrect, this is protected by NI high flux trip
- C: Incorrect, this is protected by NI high flux trip
- D: Incorrect, this is protected by Overpower Delta T

36. ILT 2009 RO 36 Unit 2 is operating at 100%

The Red channel (2PT-429) for Pressurizer Pressure has failed **high** and its bistable has been removed from service per 0-SOP-IC-001 Red, "Routine Maintenance Procedure Removal of Safeguards or Protection Sensor From Service - Red Channels."

Subsequently, the Unit 2 White instrument bus loses power.

You would expect the White Pressurizer Pressure SI bistable (2PC-430) to

- A. fail as-is and not impact the SI actuation coincidence
- B. trip resulting in an SI signal generation and automatic actuation
- C. trip but not generate an SI signal due to the Red channel failing high
- D. trip but not generate an SI signal until either the Blue or Yellow pressure channels also trip

- A: Incorrect A loss of AC power will result in a trip of the bistable
- B: Correct, loss of AC power will trip the SI bistable and 2/3 logic actuates the ESFAS
- C: Incorrect, previously removing the red instrument from service placed the channel in a trip position
- D: Incorrect, SI actuation logic is 2/3 and the Yellow channel does not input to the pressurizer pressure signal

During a large break LOCA, at what RWST level should the Spray and Charging pumps be stopped?

	<u>Spray</u>	Charging
A.	12%	9%
Β.	9%	6%
C.	9%	4%
D.	6%	4%

- A: Incorrect. Incorrect spray and charging pump level.
- B: Correct.
- C: Incorrect. Wrong charging pump level, correct level for VCT swap over to RWST.
- D: Incorrect. Incorrect spray pump level, correct level for VCT swap over to RWST.

Unit 2 has experienced a large break LOCA with loss of offsite power.

The following conditions were noted:

- Containment pressure is 27 psig
- 2A06 4160 VAC Safeguards Bus is deenergized

Which of the following pieces of equipment will be operating?

- A. 2P-14B Containment Spray Pump, 2W-1A1 and 2W-1B1 Containment Accident Recirc Fans.
- B. 2P-14B Containment Spray Pump, 2W-1C1 and 2W-1D1 Containment Accident Recirc Fans.
- C. 2P-14A Containment Spray Pump, 2W-1C1 and 2W-1D1 Containment Accident Recirc Fans.
- D. 2P-14A Containment Spray Pump, 2W-1A1 and 2W-1B1 Containment Accident Recirc Fans.

- A: Incorrect. Wrong spray pump but correct accident fans.
- B: Incorrect. Wrong spray pump and wrong accident fans.
- C: Incorrect. Right spray pump with wrong accident fans.
- D: Correct. Right spray pump and accident fans.

Unit 1 was operating at 100% when the unit tripped inadvertently. Immediate actions are complete and the following indications are observed:

- 1HX-15A Cont Ventilation SW Outlet Flow 580 gpm
- 1HX-15B Cont Ventilation SW Outlet Flow 400 gpm
- 1HX-15C Cont Ventilation SW Outlet Flow 590 gpm
- 1HX-15D Cont Ventilation SW Outlet Flow 575 gpm
- Unit 1 Containment Sump 'A' Level High alarm is LIT
- Alarm "Containment Recirc Coolers Water Flow Low" is **NOT** lit

What actions are required to respond to the above indications?

- A. Manually shut 1SW-2907/2908, "Containment Ventilation Coolers Outlet Emergency Flow Control Valves" per Containment Sump A high level alarm response.
- B. Isolate the North Service Water Header per AOP 9A, "Service Water System Malfunction."
- C. The crew will isolate non-essential service water loads per EOP 0, "Reactor Trip or Safety Injection" Attachment A, "Automatic Action Verification."
- D. The crew will have the Primary Auxiliary Building watch isolate affected component(s) per AOP 9A, "Service Water System Malfunction."

- A: Incorrect. These valves are already shut, no SI occurred. Plausible because these valves control flow to the accident fans.
- B: Incorrect. The leaking SW cooler can be isolated per AOP 9A, but valves are outside containment; isolation of the North header is not required.
- C: Incorrect. EOP 0 Att A has these actions for low flow alarm but Attachment A is not applicable without an SI
- D: Correct. With no SI, crew will go to EOP 0.1 and respond to the leak per AOP 9A and isolate the leak in the PAB.

A LOCA has occurred on Unit 2. The crew transitioned to EOP 1.4, "Transfer to Containment Sump Recirculation - High Head Injection" and placed 'B' ECCS train on high head injection.

The crew was required to complete CSP-Z.1, "Response to High Containment Pressure" and 'A' train of Containment Spray was placed in alignment for sump recirculation.

Subsequently, the following board indications have begun to fluctuate erratically:

- 2PI-628 'A' RHR Pump Discharge pressure
- 2PI-629 'B' RHR Pump Discharge pressure
- 2PI-922 'B' SI Pump Discharge pressure
- 2PI-963 'A' Spray Pump discharge flow
- 2FI-924 'B' SI Pump flow

Which of the following describes the appropriate crew response?

- A. Transition to ECA 1.1, "Loss of Containment Sump Recirculation" and stop BOTH Residual Heat Removal Pumps.
- B. Transition to ECA 1.1, "Loss of Containment Sump Recirculation" and stop 'A' Containment Spray Pump and 'B' SI Pump.
- C. Transition to ECA 1.3, "Containment Sump Blockage" and stop 'A' Containment Spray Pump and 'B' SI Pump.
- D. Transition to ECA 1.3, "Containment Sump Blockage" and stop BOTH Residual Heat Removal Pumps.

- A: Incorrect. Wrong procedure transition and you would not stop the RHR pumps as they are supplying the SI and Spray pumps.
- B: Incorrect. Stopping the SI and Spray pump is done but this is the wrong procedure transition.
- C: Correct. Stopping the SI and Spray pumps are correct in order to minimize flow so the blockage may clear.
- D: Incorrect. You would not stop the RHR pumps as they are supplying the SI and Spray pumps but this is the correct procedure.

A steam line break in Unit 1 Containment caused a Containment Spray actuation. All equipment responded as required.

What is the status of the Unit 1 Containment Spray System components thirty(30) seconds after the spray actuation?

- A. Both spray pumps running.
   All four pump discharge valves shut.
   Both spray eductor valves shut.
- B. Both spray pumps running.
   All four pump discharge valves open.
   Both spray eductor valves open.
- C. Both spray pumps running. All four pump discharge valves open. Both spray eductor valves shut.
- D. Both spray pumps secured.
   All four pump discharge valves open.
   Both spray eductor valves shut.

- A: Incorrect Discharge valves get an open signal 10 seconds after spray signal
- B: Incorrect. Eductor valves open 2 minutes after signal
- C: Correct.
- D: Incorrect. Spray pumps start after spray signal

42. ILT 2009 RO 42 Given the following:

- The unit was at full power and had an inadvertent reactor trip.
- Immediate actions have been completed and verified.
- OS-1-MOV and OS-2-MOV, 'Crossover Steam Dump Manifold Inlet' control switches are in **AUTO**.
- On C01R OS-1-MOV and OS-2-MOV RED lights are **LIT** and GREEN lights are **not** lit.
- No Operator actions have taken place.

Are these indications correct for the plant conditions, why or why not?

- A. Yes, OS-1-MOV and OS-2-MOV will remain open until the turbine rotor is <600 RPM.
- B. Yes, OS-1-MOV and OS-2-MOV will remain open until the close pushbuttons are depressed during post trip response.
- C. No, OS-1-MOV and OS-2-MOV should have automatically shut due to the lowering crossover steam dump header pressure.
- D. No, OS-1-MOV and OS-2-MOV should have automatically shut due to a direct turbine trip signal.

Explanation:

- A: Incorrect. The MOVs do not get a signal from turbine RPM. 600 RPM is a turbine number used for lift oil pump start after trip.
- B: Incorrect. The MOVs can be closed with these pushbuttons, but this is normally done during testing and manual control during start up.
- C: Correct. MOV-1 and 2 should have went shut automatically after the trip.
- D: Incorrect. MOV-1 and 2 should have went shut, but they do not get a direct turbine trip signal for their closure.

Learning Objective/#: LP0051 Crossover Steam Dumps objective 004

Unit 1 was at RTP when PT-485 "Turbine First Stage Pressure" failed. Actions per 0-SOP-IC-001- WHITE, "Routine Maintenance Procedure Removal of Safeguards or Protection Sensor From Service - White Channels" have been completed:

- Control Rods are in MANUAL
- Steam Dump Mode Selector Switch is in MANUAL
- 1PC-484 "Steam Dump Controller" is in AUTO at 1000#

Which of the following describes the expected Steam Dump valve response following a reactor trip with 1PT-484 "Steam Header Pressure" failing HIGH?

# ASSUME NO OPERATOR ACTION

- A. Steam dump valves will NOT open.
- B. Steam dump valves will 'blow open" then modulate to control Tavg at 547°F.
- C. Steam dump valves will 'blow open" then modulate to control Tavg at 551°F.
- D. Steam dump valves will fully OPEN and NOT modulate closed.

- A: Incorrect. Plausible because dumps are in MANUAL mode.
- B: Incorrect. With PT-485 removed from service, dumps would not be set to control temperature. 547F is no load Tavg
- C: Incorrect. With PT-485 removed from service, dumps would not be set to control temperature. 551F is Tavg correlated to atmospheric dump setting of 1050#
- D: Correct. Steam dumps would be in Steam pressure (Manual) mode after PT-485 was removed from service. When PT-484 failed high, the steam dumps would receive a full open signal.

The Unit was in the process of performing a reactor startup when an inadvertent Safety Injection occurred. The plant has been stabilized at normal operating pressure and temperature.

The Main Feed Regulating Valve (MFRV) and MFRV Bypass Valve controllers are in MANUAL.

Which of the following would allow manually opening the Main Feed Regulating Valves?

- A. Reset SI ONLY
- B. Reset SI and close the Reactor Trip Breakers
- C. Momentarily close (cycle) the Reactor Trip Breakers ONLY
- D. Reset SI and reset LOFWTT

- A: Incorrect. Resetting SI is required, but it is not enough to restore controller function from the Control Room.
- B: Correct.
- C: Incorrect. Shutting RTB required (they would trip open with SI signal still in) but SI must also be reset.
- D: Incorrect. LOFWTT not required. Plausible because both FRVs shut is an input into LOFWTT.

45. ILT 2009 RO 45 Given the following:

- The plant is in a 48% power hold per OP 1C, "Start up to Power Operation" for Reactor Engineering testing.
- P-28B Steam Generator Feedwater Pump is running.
- P-25B Condensate Pump is running.
- All three (3) A S/G NR level indicators are 60% and lowering
- All three (3) B S/G NR level indicators are 64% and stable
- Annunciator STEAM GENERATOR A LEVEL SETPOINT DEVIATION is LIT.

Which of the following describes the actions to be taken by the Control Operator based on these conditions?

- A. Start P-28A Steam Generator Feed Pump and monitor S/G A automatic level control for proper operation.
- B. Reduce load to < 40% to lower steam demand and monitor S/G A automatic level control for proper operation.
- C. Place HC-466 SG A Main Feed Reg Valve controller to MANUAL to restore A S/G level.
- D. Start P-25A Condensate Pump and monitor S/G A automatic level control for proper operation.

- A: Incorrect. SG levels deviate from setpoint. There is no direction that provides for immediately starting the other Main Feedwater Pump for this condition.
- B: Incorrect. SG levels deviate from setpoint. Power reduction is directed for higher power levels, but not for this condition because 1 SGFP can handle the load.
- C: Correct. SG levels deviate from setpoint. Manual control of the FRV desired with follow up in AOP 2B. With all three instruments at the same level it should be recognized as a failed controller or valve.
- D: Incorrect. An additional Condensate pump is not required.

The following conditions exist on Unit 1:

- A reactor trip / turbine trip has occurred
- The crew has transitioned to EOP 0.1, "Reactor Trip Response"
- Current step in effect is "Verify RCS Temperature Control"
- Both steam generator pressures are at 1000 psig and slowly lowering
- Both steam generator narrow range levels are <19% and lowering
- RCS temperature is 547°F and lowering slowly

Which of the following actions is required to control and minimize the cooldown of the RCS?

- A. Adjust total AFW flow, maintaining <a>200 gpm until at least 1 SG NR level is <29%, then throttle as needed to control cooldown.</a>
- B. Maintain maximum AFW flow until at least 1 SG NR level is >29%, then lower total AFW flow to <200 gpm.
- C. Immediately lower total AFW flow to approximately 50 gpm per SG.
- D. Raise AFW flow to the S/G's to at least 400 gpm until at least 1 SG NR level is >29%.

- A: Correct. EOP 0.1 Step 1 RNO actions to maintain Heat Sink
- B: Incorrect. This would be applicable with RCS temperature above 547°F.
- C: Incorrect. Applicable actions for cooldown and 2 faulted S/G's.
- D: Incorrect. This is done in CSP.S-1.

An Auxiliary Operator performing rounds notifies the control room that N2 bottle pressure for the P-38B MDAFW pump control valves is depressurizing rapidly with an unisolable leak in the piping caused by scaffold building activities in the area.

At the time of the notification, what is the status of P-38B MDAFW Pump operability?

- A. OPERABLE because Instrument Air is still available to operate the control valves as needed.
- B. OPERABLE because the control valves are in their required position for an accident.
- C. INOPERABLE because nitrogen is required as a backup to Instrument Air.
- D. INOPERABLE because we would not be able to shift the AFW pump suction supply to Service Water during an accident.

## +Explanation:

- A: Incorrect. TS require the nitrogen back up even though IA is available.
- B: Incorrect. The recirc valve is required to have nitrogen even though it is closed.

C: Correct

D: Incorrect. This is required during accident conditions, but it is an MOV.

The plant was in a normal configuration at 100% power when the following occurred:

- Supply breaker, 1A52-77, 1A-04 to 1A-06 Bus Tie Breaker tripped.
- Supply breaker, 2A52-76, 2A-03 to 2A-05 Bus Tie Breaker tripped.

Which of the following statements correctly identifies the subsequent electrical lineup with NO operator action?

- A. All four EDGs start with G02 supplying 2A-05 and G03 supplying 1A-06.
- B. All four EDGs start with G01 supplying 2A-05 and G04 supplying 1A-06.
- C. Only G01 and G04 start and supply buses 2A-05 and 1A-06 respectively.
- D. Only G02 and G03 start and supply buses 2A-05 and 1A-06 respectively.

- A: Correct. All EDG will start but only those aligned to a de-energized bus will load
- B: Incorrect. All 4 EDG's do start but EDG's supplying 4160 buses is opposite.
- C: Incorrect. Correct train alignments, but EDGs are incorrect and all 4 EDGs start
- D: Incorrect. Final configuration is correct but all 4 EDG's start.

49. ILT 2009 RO 49 A reactor trip has just occurred on Unit 1

The 4160 fast bus transfer failed to operate for Non-Safeguards Bus 1A01.

Which of the following loads is now unavailable?

- A. 1P-28B Steam Generator Feed Pump
- B. 1P-27C Heater Drain Pump
- C. 1P-25B Condensate Pump
- D. 1B02 480 volt Bus

- A: Incorrect, powered from 1A02
- B: Correct
- C: Incorrect, powered from 1A02
- D: Incorrect, powered from 1A02

Which of the following describes the impact on breaker operation capability with a loss of DC control power for 1B52-17B, "1X-14 Low Side Breaker" on 1B04 safeguards bus?

- 1B52-17B \_\_\_\_\_ be opened remotely from the control room. (CAN / CANNOT)
- 1B52-17B \_\_\_\_\_\_ trip open should a high fault current condition exist. (WILL / WILL NOT)
- A. CAN WILL
- B. CANNOT WILL
- C. CAN WILL NOT
- D. CANNOT WILL NOT

- A: Incorrect. Breaker will not remote operate.
- B: Correct. With a loss of DC control pwr the 480v breaker cannot be opened remotely, however 480v safeguards breakers are equipped with an amptector device for overcurrent protection independent of DC control power.
- C: Incorrect. Complete opposite of correct answer.
- D: Incorrect. Breaker can still trip on a fault but will not remote operate.

Given the following:

- G01 Emergency Diesel Generator is not running.
- On C-64, "EDG Gauge Board" the Engine Mode Selector switch is in "Local Start."
- G01 Mode Selector switch on C-02 is in "Auto."
- C34A, "G01 EDG Local Transfer Panel" transfer switches are in their normal "Remote" position.

How is the operation of G01 affected by having this switch alignment?

- A. G01 will **NOT** auto start. G01 **CAN** only be IDLE started from the C-64 panel.
- B. G01 will **NOT** auto start. G01 **CAN** be FAST or IDLE started from the C-64 panel.
- C. G01 <u>WILL</u> auto start. G01 <u>CAN</u> be FAST or IDLE started from the C-64 panel.
- D. G01 will **NOT** auto start. G01 **CAN** be FAST started from the C-34A panel. G01 **CAN** be IDLE started from the C-64 panel.

- A: Correct. All fast starts disabled when in LOCAL. G01 can only be Idle started in this condition.
- B: Incorrect. Idle start is enabled in this condition. G01 will not auto start, fast starts are disabled.
- C: Incorrect. G01 auto starts and fast starts disabled, idle start still works.
- D: Incorrect. Fast start from C34A can only occur in Local on C-34A but is disabled by C64 in local start. No auto starts are enabled. G01 will still idle start.

Unit 1 has been operating at 100% power for several weeks. 1SC-938C, "1RE-109 Failed Fuel Monitor Flow Valve", which is normally in a throttled position, was inadvertently placed in a full open position after RCS sampling.

1RE-109, "Failed Fuel Monitor", indication will \_\_\_\_\_\_.

- A. lower due to increased bypass flow around the detector
- B. rise because more N 16 gammas will reach the detector
- C. remain the same because the gross specific activity of the reactor coolant has not changed
- D. lower because of the increased flow which lowers the time N 16 gammas are in the detector

- A: Incorrect. 1-SC-938C is inline and not a bypass flow control valve
- B: Correct. More flow would result in more N16 flowing through the detector and a higher indication
- C: Incorrect. Higher flow would increase the detector indication.
- D: Incorrect. Higher volumetric flow rate would result in more N16 gammas

Consider the following plant conditions:

- Both Units were at 100% reactor power.
- Unit 2 Safety Injection occurs.
- All systems function as designed.

What is the expected response of the Service Water System to the Safety Injection?

- A. SW-2930A/2930B, SFP Heat Exchanger Outlet valves close AND SW-2927A/2927B, SFP Heat Exchanger Inlet valves remain open.
- B. 2SW-2880, Unit 2 Turbine Hall Service Water Supply valve closes to isolate Service Water to Unit 2 Turbine Hall.
- C. SW-2869/2870, Service Water Cross-Connect valves close to isolate the West Service Water header.
- D. 2SW-2907/2908, 2HX-15A-D Containment Recirc Heat Exchanger Emergency flow control valves open to raise flow to Containment Accident Coolers.

Explanation:

- A: Incorrect, all SFP HX valves get a shut signal.
- B: Incorrect, in the past, Turbine Hall SW flow would be isolated if fewer than 5 SW pumps started on SI signal. This is no longer the case.
- C: Incorrect, losing flow in the West header would still allow flow to the vital loads and would be a logical choice to isolate if increased SW flow was needed to SI loads.

D: Correct.

54. ILT 2009 RO 54 The following conditions exist:

- Unit 1 is at RTP.
- There are two Letdown orifices in operation for a planned downpower.
- An inadvertent Containment Isolation has occurred and Instrument Air to Containment has been lost.
- A small air leak exists in the air header inside Containment.

If normal air pressure is **NOT** restored to Containment, which of the following describes the plant's response?

(Assume **NO** operator action is taken)

- A. High pressurizer pressure reactor trip.
- B. High pressurizer level reactor trip.
- C. Low pressurizer pressure reactor trip.
- D. Low steam line pressure safety injection.

- A: Incorrect. Pressure will rise with level but would not reach the trip setpoint before reactor trip on high level. Spray valves have a nitrogen back up which last longer than it takes for level to rise for the trip.
- B: Correct. Loss of Letdown will cause Pzr level to rise until the reactor will trip on high Pzr level
- C: Incorrect. Pzr PORV's fail closed on a loss of IA
- D: Incorrect. S/G Atmospheric Dump Valves fail closed on a loss of IA

55. ILT 2009 RO 55 Given the following conditions:

-Unit 1 is in Mode 6 with RCS temperature at 100°F.
-RCS time to boil is 2 hours.
-Containment operability is **not** being maintained.
-Containment purge is in operation per OP 9C, "Containment Venting and Purging Unit 1."

The Unit 1 containment upper personnel airlock has malfunctioned such that neither door can be shut. Maintenance estimates that it will take 12 hours to return at least one of the doors to service.

Which of the following is a valid concern about the status of the upper airlock?

- A. An unmonitored release to the atmosphere is taking place while both airlock doors are open.
- B. The lower airlock cannot be utilized because one of its bulkhead doors must be locked shut.
- C. The containment closure time requirements of CL 1E, "Containment Closure Checklist", are not met.
- D. The upper airlock will not be returned to service before the one hour Technical Specification Action Condition time has expired.

- A: Incorrect. Not a concern unless a radiological accident occurs. Both doors are routinely kept open during periods of the outage.
- B: Incorrect. Possible solution for >200°F if you have to isolate a broken door.
- C: Correct. When containment operability is not maintained, CL1E is the controlling document for securing containment.
- D: Incorrect. Correct for >200°F.

56. ILT 2009 RO 56 Given the following:

- Unit 1 is at 100%
- 1P-2A Charging Pump is running in AUTO
- 1P-2C Charging Pump is running in MANUAL
- An inadvertent letdown isolation occurs
- The crew enters AOP 1D, "CVCS Malfunction"
- The procedure step in effect directs that charging be reduced to MINIMUM

What actions would the control operator take to accomplish this?

- A. Adjust 1P-2C to minimum speed and adjust HC-142 "Charging Line Flow Controller" to 100% output.
- B. Secure 1P-2A, adjust HC-142 "Charging Line Flow Controller" to 100% output and place 1P-2C to minimum speed.
- C. Secure 1P-2C, adjust HC-142 "Charging Line Flow Controller" to 0% and stabilize pressurizer level with 1P-2A in MANUAL.
- D. Secure 1P-2A, adjust HC-142 "Charging Line Flow Controller" to 0% and establish 20" RCP labyrinth seal DP with 1P-2C.

- A: Incorrect. This leaves two pumps running which does not minimize charging.
- B: Correct. The pump running in AUTO is secured and adjusting 142 to 100% shuts the valve and directs all charging flow through the RCP seals.
- C: Incorrect. HC-142 should be adjusted to 100% output. The running pump should be left MANUAL to allow for minimum setting.
- D: Incorrect. HC-142 should be adjusted to 100% output. Lab seal DP will exceed 20" with minimum charging.

57. ILT 2009 RO 57 Given the following:

- Unit 1 is at 75% power
- Power range channel N42 White upper detector fails HIGH

With no operator action, which of the following will occur?

- A. White channel Over-Temperature  $\Delta T$  setpoint goes up.
- B. White channel Over-Power  $\Delta T$  setpoint lowers.
- C. Bank D control rods step in until fully inserted.
- D. Rod withdrawal will be blocked.

- A: Incorrect. Higher reactor power reading will lower the  $OT\Delta T$  setpoint.
- B: Incorrect.  $OP\Delta T$  setpoint is not affected.
- C: Incorrect. Bank D rods will step in for a short time, not until fully inserted.
- D: Correct. 1 out of 4 coincidence is made up for rod withdrawal stop

Given the following plant conditions:

- Unit 2 has tripped due to a Small Break LOCA.
- RCS sub-cooling is 10°F
- Core Exit Thermocouples are reading 595°F and rising
- SI Pumps are running at shutoff head.
- Operators are currently entering EOP-1.2, "Small Break LOCA Cooldown and Depressurization."

Based on these conditions, which of the following choices describes the RCS cooling conditions?

- A. Reflux Cooling
- B. Inadequate Natural Circulation Cooling
- C. Natural Circulation Cooling
- D. Normal Forced RCS Cooling

- A: Incorrect. RCS is still pressurized and filled so reflux cooling would not occur. Plausible because reflux cooling could occur later in the accident.
- B: Correct.
- C: Incorrect. Subcooling of >35°F and lowering CET temps is required to verify natural circulation cooling.
- D: Incorrect. Not enough sub-cooling margin to have RCP's running.

59. ILT 2009 RO 59 Given the following:

- Unit 1 is at 100% reactor power.
- Rod control is in automatic.
- A single set of Main Air Ejectors is in service.
- 1MS-2074, "Air Ejector Steam Supply control valve" fails closed.

Which of the following will result if NO operator action is taken?

- A. Lowering megawatt output and rising hotwell temperature
- B. Rising megawatt output and rising gland seal header pressure
- C. Rising megawatt output and rising condenser hotwell level
- D. Lowering megawatt output and lowering hotwell temperature

- A: Correct. Degraded vacuum causes megawatt output to decrease due to reduced delta H and the condenser is a saturated system, so higher P<sub>sat</sub> means higher T<sub>sat</sub> and therefore higher hotwell temperature.
- B: Incorrect. MW drop
- C: Incorrect. MW drop
- D: Incorrect. Hotwell temperature rises

Given the following conditions:

- Unit 2 is operating at RTP.
- The turbine is in OPERATOR AUTO and IMP IN.
- You are the 4th RO performing TS 4A, "Turbine Trip Test (Monthly) Unit 2."
- The Unit 2 Turbine Hall Auxiliary Operator is holding the turbine trip test handle in the TEST position.
- The turbine is slowly approaching an overspeed condition due to a grid disturbance.

Which of the following describes the expected plant response?

- A. The mechanical overspeed trip will actuate and the reactor will trip.
- B. Crossover Steam Dumps will **not** actuate and the reactor will trip.
- C. IOPS will actuate and the reactor will **not** trip.
- D. Aux Governor will actuate and the reactor will **not** trip.

- A: Incorrect. The mechanical overspeed is blocked during the testing, reactor would trip on turbine trip.
- B: Incorrect. The crossover dumps will actuate on IOPS or Aux Governor actuation at this plant power.
- C: Incorrect. IOPS is not expected to actuate due to Aux Governor operation at 103% turbine rpm. IOPS will actuate at 104% turbine rpm and would cause a reactor trip.
- D: Correct. Aux Governor will actuate and the reactor will not trip because the governor valves pulse shut to keep below 103% turbine rpm.

Given the following initial plant conditions:

- Reactor power is 55%
- 'B' SGFP is isolated for maintenance
- 'A' Condensate Pump is in service
- 'B' Heater Drain Tank Pump is in service

Subsequently, the 'A' Condensate Pump trips due to a motor fault and the following is noted:

- 1P-28A SGFP Suction Pressure Low alarm is LIT
- 1P-28A SGFP Lo Suction Pressure Timer light is momentarily LIT

What actions, if any, are required?

- A. Manually start the standby Condensate Pump and manually control CS-2273, "LP FWH Bypass Valve", to restore SGFP suction pressure.
- B. Verify automatic start of the standby condensate pump and monitor the response of the main feed regulating valves.
- C. Manually start the Heater Drain Tank pump and direct the AO to take local control of HDT level.
- D. Verify automatic start of the HDT pump and monitor CS-2273, "LP FWH Bypass Valve", to ensure SGFP suction pressure is restored.

- A: Incorrect. Auto start of condensate pump would occur; taking manual action to shut CS-2273 is an action in various feed system faults. AOP direction does not have you take manual action to ever open CS-2273.
- B: Correct. Auto start of condensate pump at 180# and then verify normal parameters.
- C: Incorrect. The HDT pumps do supply suction to the feed pumps, but in this question, the HDT remains running.
- D: Incorrect. CS-2273 would open for low SGFP suction pressure, but the HDT would not automatically start.

Which of the following will AUTOMATICALLY isolate the selected Monitor Tank discharge during a liquid release to the Circulating Water System?

- A. HIGH alarm on Service Water Overboard Monitor 1RE 229.
- B. Loss of the running Monitor Tank pump.
- C. Loss of the only operating Circulating Water Pump on Unit 1.
- D. HIGH alarm on Waste Disposal System Liquid Monitor RE 218.

- A: Incorrect. Alarm function only, procedurally we would stop the discharge. These are the back up monitors for RE-218.
- B: Incorrect. No auto function on loss of flow.
- C: Incorrect. No auto function for securing an overboard discharge.
- D: Correct. High alarm auto shuts WL-218 which stops the Monitor Tank discharge.

Given the following plant conditions:

-Unit 1 is at 100% power.

- -The "A" Gas Decay Tank is being discharged per OP 9D, "Discharge of Gas Decay Tanks."
- -A forced vent of Unit 1 containment is in progress per OP 9C, "Containment Venting and Purging."

The following alarms are then received:

- Containment or Aux Bldg Vent System Air Flow Low annunciator on 1C04.
- FT 3298A, PAB Flow Stack Velocity, alarms on the RMS System Server and indicates low.

Which of the following actions is required for these conditions?

- A. Start the standby Purge Exhaust Fan.
- B. Start the standby Cavity Cooling Fan.
- C. Secure the Unit 1 containment forced vent.
- D. Secure the Gas Decay Tank discharge.

- A: Incorrect. Purge fan trip also brings in 1C04 alarm but not FT3298A. Exhaust stacks are different.
- B: Incorrect. Cavity cooling fan also brings in 1C04 alarm but not FT3298A. Exhaust stacks are different.
- C: Incorrect. This is correct if you lost a purge fan.
- D: Correct. Alarm due to loss of PAB ventilation which is confirmed by FT3298A low.

Both units are operating at 100% power. Unit 2 is on "ice melt mode" and the following conditions exist:

- Time: 2 a.m.
- Outside air temperature is 15° F
- 10 mph wind from the northwest
- Lake Michigan temperature is 32° F and stable
- Current Forebay temperature is 33° F
- The Auxiliary Operator reports the presence of floating ice

Which of the following combinations of valve positions provide the **maximum** desired effect at the crib based on these lake conditions?

	Unit 2 Ice Melt Valve	Unit 2 Seal Well Outlet Valve
A.	50% OPEN	100% OPEN
В.	50% OPEN	0% OPEN
C.	100% OPEN	100% OPEN
D.	100% OPEN	0% OPEN

- A: Incorrect. Seal well valve is in the opposite required positions with ice melt valve not full open for maximum heating.
- B: Incorrect. Ice Melt valve not fully open for maximum heating, but the Seal Well Outlet is positioned correctly.
- C: Incorrect. Ice Melt valve full open is correct, but with the Seal Well Outlet still open you are not getting maximum heating.
- D: Correct. The most heating effect at the crib intake structure occurs when <u>all</u> of the ice melt unit's circ water discharge is directed to down the intake pipe. This is accomplished by fully opening the ice melt valve, and fully shutting the seal well outlet valve.

You are the Third RO and the following alarms come in:

- Fire Protection and Smoke Detector Panel
- Electric Fire Pump Running

When you check Fire Detection Panel C-900 on C01R, the Unit 1X01 Main Transformers area indicates a steady red light.

What actions are required?

- A. Fire detection has occurred; deluge will need to be manually activated using the local handles.
- B. Fire detection and deluge activation have occurred; contact the AO to check the affected area.
- C. Fire detection has occurred; deluge will need to be manually activated using the pushbuttons on C01R.
- D. A trouble supervisory alarm has occurred; contact the AO to check the D-400 supervisory panel.

- A: Incorrect. Detection is a red blinking light.
- B: Correct. There is detection AND suppression.
- C: Incorrect. This would be done if indications showed failed suppression.
- D: Incorrect. Trouble supervisory is a yellow light.

You are a licensed Reactor Operator and were assigned to the Work Control Center on 9/1/08. Both Units have remained at RTP while assigned to the Work Control Center.

You are current in maintaining qualification in the Licensed Operator Requalification Training Program.

The date is February 23, 2009 and you are preparing to return to shift duties.

The time you were on shift since this assignment is as follows:

- 8 hours on September 18, 2008 as Unit 1 CO
- 8 hours on September 19, 2008 as Unit 1 CO
- 8 hours on October 27, 2008 as Unit 2 CO
- 8 hours on October 28, 2008 as Unit 2 CO
- 8 hours on November 23, 2008 as Third CO
- 8 hours on November 22, 2008 as Third CO
- 8 hours on December 24, 2008 as Third CO

Which of the following describes the status of your license in accordance with OM 3.10, "Operations Personnel Assignments and Scheduling"?

- A. Your license is active. You may stand watch with no restrictions.
- B. Your license is active. You must regain qualification as RO by standing three (3) additional 8-hour shifts in the Unit 1 or Unit 2 CO position.
- C. Your license is inactive. You must reactivate your license by standing two (2) additional 8-hour shifts in any CO position.
- D. Your license is inactive. You must reactivate your license by standing forty (40) hours on shift under instruction in any CO position.

- A: Incorrect. License is inactive due to insufficient hours last quarter.
- B: Incorrect. Proficiency is not based on board position.
- C: Incorrect. To reactivate you need 40 hours of watch standing.
- D: Correct. Last calendar quarter did not stand 7 shifts.

In accordance with OM 3.34, "Reactivity Management Procedure", which of the following NON-LICENSED individuals can manipulate the controls of the reactor if under the direct supervision of the licensed Reactor Operator?

- A. A Reactor Engineer during physics testing.
- B. An individual enrolled in an approved license training program.
- C. An Auxiliary Operator during surveillance testing with direct SRO oversight.
- D. A qualified Shift Technical Advisor during CSP-S.1 "Response to Nuclear Power Generation/ATWS."

- A: Incorrect. Reactor Engineer works with RO for reactor operations.
- B: Correct. Must be enrolled in licensed operator program.
- C: Incorrect. NLOs work with ROs but cannot manipulate controls.
- D: Incorrect. STAs are allowed to do control board peer checks only

Which of the following is an example of an expected behavior of Conservative Decision Making?

Tripping the reactor with \_\_\_\_\_.

- A. NI power 107% and rising
- B. the condenser at 24" Hg vacuum and degrading
- C. Pressurizer pressure 2365 psig and rising
- D. S/G levels 25% and lowering

- A: Incorrect. Auto NI trip is at 107%, conservatively should be tripped prior to that.
- B: Correct. Auto turbine trip on vacuum trip is at 20" hg, this is a conservative trip.
- C: Incorrect. Auto Pressurizer high pressure trip is 2365 psig, conservatively should be tripped prior to that.
- D: Incorrect. Auto Reactor trip required at this level, conservatively should be tripped prior to that.
Given the following plant conditions recovering from a refueling outage:

- RCS pressure is 375 psig
- RCS temperature is 275°F
- The Pressurizer is solid
- RHR Pumps are secured
- Both Reactor Coolant Pumps are operating

A planned evolution requires the RCP's secured for approximately 15 minutes.

Which of the following plant conditions would **NOT** allow re-starting the RCP's?

- A. RCS temperature lowers to 265°F.
- B. The 'B' Steam Generator temperature is 60°F above RCS cold leg temperature.
- C. Core outlet temperature rises to 20°F below saturation temperature.
- D. Steam Generator NR levels are at 40%.

- A: Incorrect. LTOP required temperature is 285°F and the examinees may think an RCP cannot be started below this temperature.
- B: Correct. Temperature must be within 50°F when less than LTOP required temperature of 285°F.
- C: Incorrect. Misapplication of the LOC 3.4.6 note
- D: Incorrect. Misapplication of the LOC 3.4.6 note

A situation arises during the performance of an operations procedure such that it **<u>cannot</u>** be performed as written and requires a non-intent change to correct. The correct action to be taken is to \_\_\_\_\_.

- A. initiate a temporary change while continuing with the work
- B. stop the work and initiate a temporary change to the procedure
- C. stop the work and have a supervisor make pen and ink changes before continuing
- D. continue with the work and note any deviations in the remarks section of the procedure

- A: Incorrect. Correct process but work must stop. You are allowed to continue with typo's, but not if procedure can't be performed as written.
- B: Correct.
- C: Incorrect. Pen and Ink changes are allowed for typo's but not for step changes
- D: Incorrect. The remarks section is used for documenting improvements, why steps were marked N/A, etc.

Per NP 4.2.14, "Administrative Dose Levels/Dose Level Extension Procedure", an individual at Point Beach has an administrative dose limit of (1) \_\_\_\_\_ mrem TEDE per year. This can be raised to a maximum of (2) \_\_\_\_\_ mrem TEDE per year by the **Shift Manager**.

- A. (1) 1000
  - (2) 3000
- B. (1) 1000
  - (2) 4000
- C. (1) 2000
  - (2) 4000
- D. (1) 2000
  - (2) 4500

- A: Incorrect, incorrect initial admin level but second part is correct level for FLS extension.
- B: Incorrect, incorrect initial level but second part is correct for Shift Manager permission required to go to 4000 mrem.
- C: Correct, correct initial admin level and second part is correct level for Shift Manager extension.
- D: Incorrect, correct initial admin level and Operations Manager permission needed to exceed 4000 mrem.

An Operator has just completed an **emergency entrance** to the RCA through the RCA checkpoint, including use of an EPD located on top of the RCA Fire Brigade locker. The initial EPD total dose reading was **5 mrem**.

The EPD was reading **10 mrem** when the RCA was exited.

Which of the following describes the Operator's action concerning the EPD and dose received on exiting the RCA?

- A. Report 10 mrem dose to the Shift Manager and return the EPD to the top of the RCA Fire Brigade locker.
- B. Report 10 mrem dose to the RP group and return the EPD to RP group.
- C. Report 5 mrem dose to the Shift Manager and return the EPD to the RP group.
- D. Report 5 mrem dose to the RP group and return the EPD to the top of the RCA Fire Brigade locker.

- A: Incorrect. Wrong dose reported to correct person
- B: Incorrect. Wrong dose reported to wrong group
- C: Correct
- D: Incorrect. Correct dose but placed back in wrong location

Prior to moving irradiated fuel assemblies with the Spent Fuel Bridge and the Spent Fuel Handling Tool, we ensure that long-handled tools have holes drilled in them.

Why do we require long handled tools to fill with water while working in the SFP?

- A. Filling the tools with water helps minimize buoyancy for easier handling of fuel assemblies.
- B. To prevent radiation streaming from highly radioactive material stored under water.
- C. The water provides shielding which minimizes spurious Spent Fuel Pool Area Radiation Monitor Alarms.
- D. Keeping the inside of the tool wet prevents airborne conditions from developing thus minimizing personnel exposure.

- A: Incorrect. Buoyancy is not an issue with fuel assembly weight.
- B: Correct. Minimizes radiation exposure to the upper body.
- C: Incorrect. Streaming radiation from the tool would not affect ARM's in the area.
- D: Incorrect. A common practice to minimize airborne is wetting surfaces.

'Given the following Unit 1 plant conditions:

-OP 3C, "Hot Standby to Cold Shutdown", is in progress.

-1P-10A, "RHR Pump", is running.

-Preparations are being made to start 1P-10B, "RHR Pump."

-RCS temperature is 250°F and slowly lowering.

-1P-10A suddenly trips due to motor failure.

- -An attempt to start 1P-10B is made, however, its breaker will NOT close.
- -Subsequent attempts to start an RHR pump have failed.
- -The procedure currently in effect is SEP 1.1, "Alternate Core Cooling."

Which of the following methods available in SEP 1.1 would **NOT** provide for decay heat removal for these conditions?

- A. Steaming via a S/G and utilizing Condensate as makeup to the S/G.
- B. Feeding with a Safety Injection Pump and opening a Pressurizer PORV.
- C. Gravity drain of the Refueling Water Storage Tank to the RCS via the RHR piping.
- D. Steaming via a S/G and utilizing Auxiliary Feedwater as makeup to the S/G.

- A: Incorrect. Allowable make up per step 5. Plant conditions have intact RCS and S/G
- B: Incorrect. Allowable per Step 43 and 55. This is for an open RCS with no S/G
- C: Correct. Due to pressures in the RCS the RWST will not gravity fill.
- D: Incorrect. Allowable make up per step 5. Plant conditions have intact RCS and S/G

Unit 1 is in the process of recovering from a refueling outage filling the Reactor Coolant System when the following conditions were noted:

- Both Residual Heat Removal (RHR) Pumps were secured due to erratic hydraulic operation.
- The Crew entered SEP 1, "Degraded RHR System Capability."
- Reactor vessel level is 78% and stable.
- The highest reading Core Exit Thermocouple (CET) is 138°F.
- The plant has been shutdown for 30 days.

Using the given references determine the **MAXIMUM** time available until boiling occurs in the Reactor Coolant System.

- A. 47 minutes
- B. 59 minutes
- C. 65 minutes
- D. 73 minutes

- A: Incorrect. Time given uses 76%, 140°F and does not take into account the 1.3 multiplication factor. (47 minutes)
- B: Correct. Conservatively use 76% level, 140°F and using the 1.3 multiplication factor. (46x1.3=59.8 hours or 47x1.3=61.1 hours)
- C: Incorrect. Time given uses the 76% level with 35 days and 140°F, with using the 1.3 multiplication factor. (50x1.3=65 minutes)
- D: Incorrect. Time given uses the 76% level and 100°F with no multiplication factor. (73 minutes)

ES-401	Written Examination	Question Worksheet	For	rm-401-5
Examination Outline Cross-reference:		Level Tier #	RO	SRO 1
		Group #		1
		K/A #	011.2	2.4.20
		Importance Rating		4.3
Proposed Question:	<b>SRO# 1, SE</b>	E ATTACHED		
Proposed Answer: Explanation (Option Technical Reference (Attach if not previse provided)	D nal): SEE ATTAC e(s): EOP 1.3 Co Injection No	CHED ntainment Sump Recire ote prior to step 1	culation - Lov	w Head
Proposed references	s to be provided to ap	plicants during examinat	ion:	
Learning Objective	: <b>LP0435/010</b>	(A	s available)	
Question Source:	Bank # Modified Bank New	(Not	e changes or a	attach parent)
Question History:	Last NRC Exar	n <b>NEW</b>		
(Optional - Questions v NRC; failure to provide	alidated at the facility sin the information will nece	ce 10/95 will generally undergessitate a detailed review of every	go less rigorous r very question)	review by the
Question Cognitive	Level: Memory of Comprehe	or Fundamental Knowled ension or Analysis	lge <b>3-PEC</b>	)
10 CFR Part 55 Cor	ntent: 55.41	X		

KA Statement: Knowledge of the operational implications of EOP warnings, cautions and notes. (Large Break LOCA)

Х

55.43

ES-401	Written E	xamination Q	Question Workshee	et For	m-401-5
Examination (	Dutline Cross-r	eference:	Level Tier # Group # K/A #	RO 015.A	SRO <u>1</u> <u>1</u> A2.09 <u>3.5</u>
Proposed Que	stion:	SRO# 2, SEI	E ATTACHED	ing	
Proposed Ans	wer:	B			
Explanation (	Optional): S	SEE ATTAC	HED		
Technical Ref (Attach if not provided)	erence(s): previously	AOP-1B, RC and Step 18	<b>P</b> Malfunction er	ntry conditons, Fol	dout Page
Proposed refer	rences to be pro-	ovided to app	olicants during exa	mination:	
Learning Obje	ctive: LP	2438/004		(As available)	
Question Sour	ce: Bar Mo Nev	ık # dified Bank <sup>w</sup>	INPO 28922 MODIFIED	(Note changes or	attach parent)
Question Histo	ory: Las	t NRC Exam	MODIFIED	- INPO 28922 2004	Indian Point
(Optional - Quest NRC; failure to p	tions validated at provide the inform	the facility sinc nation will neces	e 10/95 will generally ssitate a detailed revie	undergo less rigorous r w of every question)	eview by the
Question Cog	nitive Level:	Memory of Comprehe	r Fundamental Knon nsion or Analysis	owledge 1-P	-
10 CFR Part 5	5 Content:	55.41 <u></u>	X		

KA Statement: Ability to determine and interpret the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): When to secure RCP's on high stator temperatures

ES-401 Wr	itten Examination	Question Worksheet	Fo	rm-401-5
Examination Outline	Cross-reference:	Level Tier #	RO	SRO 1 1
		Group #	026.2	2.1.07
		Importance Rating		4.7
Proposed Question:	SRO# 3, SE	E ATTACHED		
Proposed Answer: Explanation (Optional Technical Reference(s (Attach if not previous provided)	A SEE ATTAC S): AOP 9B Cor Sly 1C 4-7 NRH	CHED mponent Cooling Water IX High Outlet Temp	r Malfunctio	n, ARB 1C04
Proposed references to	be provided to ap	plicants during examination	ion:	
Learning Objective:	LP2444/009	(As	s available)	
Ouestion Source:	Bank # Modified Bank New	PBNP EXAM BANK (Note	C changes or a	attach parent)
Question History:	Last NRC Exan	n <b>Point Beach 1999</b>		
(Optional - Questions valid NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally underg essitate a detailed review of ev	o less rigorous ery question)	review by the
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	ge	_
10 CFR Part 55 Conte	ent: 55.41	X		

KA Statement: Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation. (Loss of Component Cooling Water)

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55.43

ES-401 Wri	tten Examination (	Question Worksheet	For	rm-401-5
Examination Outline Cross-reference:		Level Tier #	RO	SRO 1
		Group #		$\frac{1}{200}$
		K/A #	U55.E	A2.00 4 1
		Importance Rating		
Proposed Question:	<b>SRO# 4, SE</b>	E ATTACHED		
Proposed Answer	В			
Tioposed Allswer.				
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): ARB C81 2- ARB C81 2- ARB C02 E ARB C02 D ARB C81 1- ARB C64A	ss of All AC, 1 Fail to start/run, 1-2 G03 Lockout, 1-6 G01 Lockout, 2 Unit Lockout, C34 18 Overspeed T	rip	
Proposed references to	be provided to ap	plicants during exami	nation:	
Learning Objective:	LP0462/008		(As available)	
<b>Ouestion Source:</b>	Bank # Modified Bank	[]	Note changes or a	
	New	NEW		attach parent)
Question History:	New Last NRC Exan	NEW n NEW		attach parent)
Question History: (Optional - Questions valid NRC; failure to provide the	New Last NRC Exan lated at the facility sind information will nece	NEW           n         NEW           ce 10/95 will generally un essitate a detailed review of the second s	dergo less rigorous of every question)	review by the
Question History: (Optional - Questions valid NRC; failure to provide the Question Cognitive Le	New Last NRC Exan lated at the facility since information will nece evel: Memory of Comprehe	NEW           n         NEW           ce 10/95 will generally un essitate a detailed review of the second s	dergo less rigorous of every question) Yledge	review by the

KA Statement: Faults and lockouts that must be cleared prior to re-energizing busses. (Station Blackout)

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55.43

ES-401 Wri	itten Examination	Question Workshee	t For	rm-401-5
Examination Outline O	Cross-reference:	Level Tier # Group # K/A #	RO 	SRO 1 2.4.50 4.0
Proposed Question:	SRO# 5, SE	E ATTACHED	ng	
Proposed Answer:	A			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided) Proposed references to	): sly EOP-0 Atta STPT 2.2 St	onse Book 1C03 11 P EOP Procedure S chment A for autor eam Line Isolation plicants during examplicants	D Steam Line A Is Sets Use step 4.1.8 matic action verif	solation, B.a ication
Learning Objective:	LP0153/009		(As available)	
Ouestion Source:	Bank # Modified Bank New	NEW	(Note changes or a	ttach parent)
Question History:	Last NRC Exar	n <b>NEW</b>		
(Optional - Questions valid NRC; failure to provide the	lated at the facility sin e information will nece	ce 10/95 will generally essitate a detailed review	undergo less rigorous w of every question)	review by the
Question Cognitive Le	evel: Memory of Comprehe	or Fundamental Kno ension or Analysis	owledge <b>2-DR</b>	_
10 CFR Part 55 Conte	nt: 55.41	X		_
	55.43	X		

KA Statement: Ability to verify system alarm setpoints and operate controls identified in the alarm response manual. (Steam Line Rupture)

ES-401 Wr	Written Examination Question Worksheet		For	rm-401-5
Examination Outline Cross-reference:		Level Tier # Group #	RO	SRO 1 1
		K/A #	057.A	A2.05
		Importance Ratin	g	3.8
Proposed Question:	SRO# 6, SE	E ATTACHED		
Proposed Answer: Explanation (Optional Technical Reference(s	$\frac{B}{}$	CHED	a Attachment D	and bagag
(Attach if not previous provided)	AOP 2B Fee	edwater System mal	function	
Proposed references to	b be provided to ap	plicants during exam	ination:	
Learning Objective:	LP3456/002		(As available)	
Ouestion Source:	Bank # Modified Bank New	(1	Note changes or a	attach parent)
Question History:	Last NRC Exan	n <b>NEW</b>		
(Optional - Questions valid NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally us essitate a detailed review	ndergo less rigorous of every question)	review by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Know ension or Analysis	vledge	_

KA Statement: Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: S/G pressure and level meters

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55.43

ES-401 W	ritten Examination (	Question Worksheet	Form-401-5
Examination Outline Cross-reference:		Level Tier # Group #	RO         SRO           1         2
		K/A #	059.AA2.05
		Importance Ratin	ng 3.9
Proposed Question:	<b>SRO# 7, SE</b>	E ATTACHED	
Proposed Answer: Explanation (Option	A al): SEE ATTAC	CHED andard Batch Rele	ase - Waste Distillate Tanks
Technical Reference (Attach if not previo provided)	(s): P&L 3.8; usly RAM 3.1.1, RMSARB C Tank Overb	Restarting a Liqui CI RE-223, Alarm H board Monitor	d Batch Release, Response for Waste Distillate
Proposed references	to be provided to ap	plicants during exam	nination:
Learning Objective:	LP0063/004		(As available)
Ouestion Source:	Bank # Modified Bank New	PBNP EXAM B MODIFIED	ANK (Note changes or attach parent)
Ouestion History:	Last NRC Exan	n <b>MODIFIED</b> –	Point Beach 2007

Question History:

(Optional - Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC; failure to provide the information will necessitate a detailed review of every question)

Question Cognitive Level:	Memory Compre	y or Funda hension o	mental Knowledge r Analysis	e <u>1-P</u>
10 CFR Part 55 Content:	55.41		_	
	55.43	X		

KA Statement: Ability to determine and interpret the following as they apply to the Accidental Liquid Radwaste Release: The occurrence of automatic safety actions as a result of a high PRM system signal.

ES-401 W1	itten Examination (	Question Worksheet	For	rm-401-5
Examination Outline Cross-reference:		Level Tier #	RO	SRO 1 2
		Group # $K/\Lambda$ #		3.2.2.22
		Importance Rating		4.7
Proposed Question:	SRO# 8, SE	E ATTACHED		
Proposed Answer:	C			
Explanation (Optiona	l): SEE ATTAC	CHED		
Technical Reference( (Attach if not previou provided)	s): EOP 1.2 Sm sly LCO 3.4.3 F EOP Setpoin	all Break LOCA Coold RCS Pressure and Temj nt document Z.17	lown and Dep perature Lim	pressurization, its Bases
Proposed references t	o be provided to ap	plicants during examinat	ion:	
Learning Objective:	LP0435/010	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	(Note	e changes or a	attach parent)
Question History:	Last NRC Exan	n <b>NEW</b>		
(Optional - Questions vali NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally undergessitate a detailed review of every	go less rigorous very question)	review by the
Question Cognitive L	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge <b>1-B</b>	_
10 CFR Part 55 Conte	ent: 55.41	X		

KA Statement: Knowledge of limiting conditions for operations and safety limits (LOCA Cooldown and Depressurization)

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55.43

LS-401 WI	itten Examination	Question Worksheet	For	rm-401-5
Examination Outline Cross-reference:		Level Tier #	RO	SRO 1
		Group #		2
		K/A #	W/E09	<b>D.EA2.1</b>
		Importance Rating		3.8
Proposed Question:	SRO# 9, SE	E ATTACHED		
Proposed Answer:	D			
Explanation (Optional	): SEE ATTAC	CHED		
(Attach if not previous provided) Proposed references to	Vessel (with EOP-0.1, Re EOP-0.2, Na	RVLIS) eactor Trip Response, atural Circulation Coold plicants during examinati	<b>lown and Ba</b> on:	nckground
(Attach if not previous provided) Proposed references to Learning Objective:	Vessel (with EOP-0.1, Re EOP-0.2, Na be provided to ap LP0407/003	RVLIS) eactor Trip Response, atural Circulation Coold plicants during examinati	<b>lown and Ba</b> on: available)	ackground
(Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source:	Vessel (with EOP-0.1, Re EOP-0.2, Na be provided to ap LP0407/003 Bank #	RVLIS) eactor Trip Response, atural Circulation Coold plicants during examinati (As PBNP EXAM BANK	<b>lown and Ba</b> on: available)	nckground
(Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source:	Vessel (with EOP-0.1, Re EOP-0.2, Na be provided to ap LP0407/003 Bank # Modified Bank New	RVLIS) eactor Trip Response, atural Circulation Coold plicants during examinati (As PBNP EXAM BANK (Note	lown and Ba on: available)	ackground
(Attach if not previous provided) Proposed references to Learning Objective: Ouestion Source: Question History:	Vessel (with EOP-0.1, Re EOP-0.2, Na be provided to ap LP0407/003 Bank # Modified Bank New Last NRC Exan	a <b>RVLIS</b> ) eactor Trip Response, atural Circulation Coold plicants during examinati (As <u>PBNP EXAM BANK</u> (Note n <u>Point Beach 2007</u>	lown and Ba on: available)	ackground
<ul> <li>(Attach if not previous provided)</li> <li>Proposed references to Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valid NRC; failure to provide the second second</li></ul>	Vessel (with EOP-0.1, Re EOP-0.2, Na be provided to ap LP0407/003 Bank # Modified Bank New Last NRC Exam lated at the facility since information will nece	atural Circulation Coold         atural Circulation Coold         plicants during examinati	lown and Ba on: available) changes or a changes or a o less rigorous ery question)	ackground
<ul> <li>(Attach if not previous provided)</li> <li>Proposed references to Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valid NRC; failure to provide the Question Cognitive Learning Cognitive Learning</li></ul>	Vessel (with EOP-0.1, Re EOP-0.2, Na be provided to ap LP0407/003 Bank # Modified Bank New Last NRC Exant lated at the facility since information will nece evel: Memory of Comprehe	<b>RVLIS</b> )         eactor Trip Response,         atural Circulation Coold         plicants during examinati	lown and Ba on: available) changes or a changes or a o less rigorous ery question) ge <u>3-PEC</u>	ackground
<ul> <li>(Attach if not previous provided)</li> <li>Proposed references to Learning Objective:</li> <li>Ouestion Source:</li> <li>Question History:</li> <li>(Optional - Questions valid NRC; failure to provide the Question Cognitive Learning Cognitive Learning Cognitive Learning Objective Learning</li></ul>	Vessel (with EOP-0.1, Re EOP-0.2, Na be provided to ap LP0407/003 Bank # Modified Bank New Last NRC Exant lated at the facility since information will nece evel: Memory of Comprehe- nt: 55.41	<b>RVLIS</b> )         eactor Trip Response,         atural Circulation Coold         plicants during examinati	lown and Ba on:	ackground

KA Statement: Ability to determine and interpret the following as they apply to the Natural Circulation operations: Facility conditions and selection of appropriate procedures during abnormal and emergency Operations.

ES-401 Wr	itten Examination (	Question Worksheet	For	m-401-5
Examination Outline (	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO  	SRO <u>1</u> <u>2</u> 2.4.45 <u>4.3</u>
Proposed Question:	SRO# 10, SI	EE ATTACHED		
Proposed Answer: Explanation (Optional Technical Reference(s (Attach if not previous provided)	C ): SEE ATTAC ): CSP P.1 Pressly STPT 11.1 fe	CHED Sourized Thermal S or subcooling alert a	hock step 26 alarm	
Proposed references to	be provided to app	plicants during exam	ination:	
Learning Objective:	LP1999/002		(As available)	
Question Source:	Bank # Modified Bank	(1	Note changes or at	tach parent)

Question History	Loot NDC Evom	NFW
Question History:	Last NKC Exam	

New

NEW

(Optional - Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC; failure to provide the information will necessitate a detailed review of every question)

Question Cognitive Level:	Memor	v or Fundamental Knowledge	
	Compre	ehension or Analysis	3-SPK
10 CFR Part 55 Content:	55.41	X	
	55.43	<u> </u>	

KA Statement: Ability to prioritize and interpret the significance of each annunciator alarm. (Pressurized Thermal Shock)

ES-401 W1	ritten Examination	Question Worksheet	For	rm-401-5
Examination Outline	xamination Outline Cross-reference:		RO	SRO 2
		Group #		$\frac{2}{20}$
		K/A #	004.2	4.2.39
		Importance Rating		4.3
Proposed Question:	SRO# 11, S	EE ATTACHED		
Proposed Answer:	B			
Explanation (Optiona	l): SEE ATTAC	CHED		
Technical Reference(	s): <b>TRM 3.5.1</b>	CVCS,		
(Attach if not previou provided)	TLB 5 BAS	1,		
(Attach if not previou provided) Proposed references t Learning Objective:	o be provided to ap	<b>1</b> , oplicants during examinat	TRM ion: <u>TLB s</u> s available)	3.5.1 CVCS 5 BAST,
(Attach if not previou provided) Proposed references t Learning Objective: Question Source:	o be provided to ap <u>LP3410/003</u> Bank #	n, oplicants during examinat	TRM ion: <u>TLB (</u> s available)	3.5.1 CVCS 5 BAST,
(Attach if not previou provided) Proposed references t Learning Objective: Question Source:	o be provided to ap LP3410/003 Bank # Modified Bank	pplicants during examinat (A:	TRM ion: <u>TLB :</u> s available) e changes or a	3.5.1 CVCS 5 BAST, ttach parent)
(Attach if not previou provided) Proposed references t Learning Objective: Ouestion Source:	o be provided to ap LP3410/003 Bank # Modified Bank New	pplicants during examinat (As (Note <u>NEW</u>	TRM ion: <u>TLB (</u> s available) e changes or a	<b>3.5.1 CVCS</b> <b>5 BAST</b> , ttach parent)
(Attach if not previou provided) Proposed references t Learning Objective: Ouestion Source: Question History:	o be provided to ap LP3410/003 Bank # Modified Bank New Last NRC Exar	pplicants during examinat (As (Note <u>NEW</u> NEW	TRM ion: <u>TLB (</u> s available) e changes or a	<b>3.5.1 CVCS</b> 5 <b>BAST</b> , ttach parent)
<ul> <li>(Attach if not previou provided)</li> <li>Proposed references t</li> <li>Learning Objective:</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions vali NRC; failure to provide th</li> </ul>	o be provided to ap <b>LP3410/003</b> Bank # Modified Bank New Last NRC Exar dated at the facility sin he information will neco	pplicants during examinat (As (Note <u>NEW</u> n <u>NEW</u> (Note <u>NEW</u> n <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> ) (Note <u>NEW</u> ) (Note	TRM ion: <u>TLB s</u> s available) e changes or a go less rigorous r very question)	<b>3.5.1 CVCS</b> <b>5 BAST</b> , attach parent) review by the
<ul> <li>(Attach if not previou provided)</li> <li>Proposed references t</li> <li>Learning Objective:</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions vali NRC; failure to provide th</li> <li>Question Cognitive L</li> </ul>	o be provided to ap <b>LP3410/003</b> Bank # Modified Bank New Last NRC Exar dated at the facility sin he information will neco evel: Memory of Comprehe	pplicants during examinat (As (Note <u>NEW</u> n <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> (Note <u>NEW</u> ) (Note <u>NEW</u> ) (Not	TRM ion: <u>TLB s</u> s available) e changes or a go less rigorous r very question) ge <u>3-SPR</u>	<b>3.5.1 CVCS</b> <b>5 BAST</b> , uttach parent)
<ul> <li>(Attach if not previou provided)</li> <li>Proposed references t</li> <li>Learning Objective:</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions vali NRC; failure to provide th</li> <li>Question Cognitive L</li> <li>10 CFR Part 55 Contect</li> </ul>	o be provided to ap <b>LP3410/003</b> Bank # Modified Bank New Last NRC Exar dated at the facility sin he information will neco evel: Memory of Comprehe- ent: 55.41	pplicants during examinat (As (Note <u>NEW</u> n <u>NEW</u> (Note <u>NEW</u> n <u>NEW</u> (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note NEW (Note (Note NEW (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (Note (N	ion: TRM TLB s s available) e changes or a go less rigorous r very question) ge <u>3-SPR</u>	3.5.1 CVCS 5 BAST, attach parent) review by the
<ul> <li>(Attach if not previou provided)</li> <li>Proposed references t</li> <li>Learning Objective:</li> <li>Question Source:</li> <li>Question History:</li> <li>(Optional - Questions vali NRC; failure to provide th</li> <li>Question Cognitive L</li> <li>10 CFR Part 55 Conternation</li> </ul>	o be provided to ap <b>LP3410/003</b> Bank # Modified Bank New Last NRC Exar dated at the facility sin he information will neco evel: Memory of Comprehe- ent: 55.41 55.43	pplicants during examinat (As (Note <u>NEW</u> n <u>NEW</u> ace 10/95 will generally underg essitate a detailed review of ev or Fundamental Knowled ension or Analysis <u>X</u> <u>X</u>	ion: TRM TLB s s available) e changes or a go less rigorous n very question) ge <u>3-SPR</u>	3.5.1 CVCS 5 BAST, uttach parent;

ES-401 Wri	tten Examination (	Question Worksheet	For	rm-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 006.4	SRO 2 2 4.8
Proposed Question:	SRO# 12, SI	EE ATTACHED		
Proposed Answer:	D			
Explanation (Optional)	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): ly <b>EOP 0.1 Re</b> :	actor Trip Response		
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	LP0405/007	(A	As available)	
Ouestion Source:	Bank # Modified Bank New	<u>INPO 28121</u> (Not	te changes or a	ttach parent)
Question History:	Last NRC Exan	n INPO 28121 Robi	nson 2004	
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous revery question)	review by the
Question Cognitive Le	evel: Memory of Comprehe	or Fundamental Knowled ension or Analysis	dge <u>1-P</u>	_
10 CFR Part 55 Conten	nt: 55.41	X		
KA Statement: Ability ECCS; and (b) based on consequences of those m	to (a) predict the im those predictions, us	pacts of the following mal se procedures to correct, continues: Conditions requiring	functions or ope ontrol, or mitiga actuation of F	erations on the te the CCS

ES-401 Writ	ES-401 Written Examination Question Worksheet			rm-401-5
Examination Outline C	ross-reference:	Level Tier # Group # K/A # Importance Rating	RO 026.2	SRO 2 2.4.6 4.7
Proposed Question:	SRO# 13, SI	EE ATTACHED		
Proposed Answer: Explanation (Optional)	B : SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous) provided)	EOP 1.3 Con Injection ste	ntainment Sump Recir p 16.	culation - Lov	v Head
Proposed references to	be provided to ap	plicants during examinat	tion:	
Learning Objective:	LP0435/010	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	PBNP EXAM BAN (Not	<b>K</b> e changes or a	ttach parent)
(Optional - Questions valida NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under	go less rigorous r very question)	review by the
Question Cognitive Let	vel: Memory o Comprehe nt: 55.41	or Fundamental Knowled ension or Analysis X	lge2-RI	-
	55.43	Λ		

KA Statement: Knowledge of EOP mitigation strategies (Containment Spray)

ES-401 Written I	Examination (	Question Workshee	t For	m-401-5
Examination Outline Cross-	reference:	Level Tier # Group # K/A # Importance Ratig	RO 076.A	
Proposed Question:	SRO# 14, SI	EE ATTACHED		
Proposed Answer:	<u>B</u>			
Explanation (Optional):	SEE ATTAC	CHED		
Technical Reference(s): (Attach if not previously provided) Proposed references to be p	AOP-9A Ser	rvice Water Systen	n Malfunction step	o 4
Question Source: Ba	nk # odified Bank	NEW	(Note changes or a	ttach parent)
Question History: La	st NRC Exan	n <b>NEW</b>		
(Optional - Questions validated a NRC; failure to provide the inform	t the facility sind mation will nece	ce 10/95 will generally essitate a detailed review	undergo less rigorous r v of every question)	eview by the
Question Cognitive Level:	Memory of Comprehe	or Fundamental Kno ension or Analysis	owledge	_
10 CFR Part 55 Content:	55.41 55.43	X		

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KA Statement: Ability to (a) predict the impact of the following malfunctions or operations on the SWS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:Loss of SWS

ES-401 Wri	tten Examination (	Question Worksheet	Form-401-5	
Examination Outline O	Cross-reference:	Level Tier # Group # K/A #	RO 103.2	SRO 2 2 .2.38 4 5
Proposed Question:	SRO# 15, SI	EE ATTACHED		<b></b>
Proposed Answer:	С			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): ly <b>TS Admin s</b> e	ection 5.0 (5.5.16 Cont	ainment Leak	age Program)
Proposed references to examination:	be provided to ap	plicants during	TS Admin sec Programs and	tion 5.5 Manuals
Learning Objective:	LP0618/006		As available)	
Ouestion Source:	Bank # Modified Bank New	PBNP BANK (No	te changes or a	ttach parent)
Question History:	Last NRC Exan	<sup>n</sup> PBNP Tech Spec	Bank	
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally unde essitate a detailed review of e	rgo less rigorous r every question)	eview by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowle ension or Analysis	edge 3-SPR	-
10 CFR Part 55 Conte	nt: 55.4155.43	X X		
KA Statement: Knowle	edge of conditions an	nd limitations in the facilit	ty license. (Conta	ainment)

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ES-401	Written Examination	Question Worksheet	Form-	-401-5
Examination Out	line Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 014.2.1	SRO 2 2 23 4.4
Proposed Question	on: SRO# 16, S	SEE ATTACHED		
Proposed Answe Explanation (Opt	:: <u>C</u> ional): SEE ATTA	CHED		
Technical Refere (Attach if not pre provided)	nce(s): viously AOP 6B St	od Group Alignments ar uck or Misaligned Cont	nd bases, rol Rod	
Proposed referen	ces to be provided to a	pplicants during examina	tion:	
Learning Objecti	ve: LP2441/006	(A	As available)	
<b>Ouestion Source:</b>	Bank # Modified Bank	K (Not	te changes or atta	ch parent)

Question History:	Last NRC Exam	NEW

NEW

(Optional - Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC; failure to provide the information will necessitate a detailed review of every question)

Question Cognitive Level:	Memory	or Funda	mental Knowledge	<b>1-P</b>
	Compreh	nension of	r Analysis	
10 CFR Part 55 Content:	55.41	X	_	
	55.43	X	_	

New

KA Statement: Ability to perform specific system and integrated plant procedures during all modes of plant operation. (Rod Position Indication)

ES-401 Wri	tten Examination (	Question Works	heet Fo	rm-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance F	RO 	SRO 2 2 K5.02 2.6
Proposed Question:	SRO# 17, SI	EE ATTACHE	D	
Proposed Answer: Explanation (Optional Technical Reference(s (Attach if not previous provided)	B ): SEE ATTAC ): 0-SOP-FH-0 P&L 3.7.1	CHED 001 Fuel Handli	ing Movements in the	e SPF or NFV
Proposed references to	be provided to ap	plicants during e	examination:	
Learning Objective:	LP0285/002	······8·	(As available)	
Ouestion Source:	Bank # Modified Bank New	NEW	(Note changes or a	attach parent)
Question History:	Last NRC Exan	n <u>NEW</u>	11 1 1 1	
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generate solution and the second s	ally undergo less rigorous eview of every question)	review by the
Question Cognitive Le	evel: Memory of Comprehe nt: 55.41	or Fundamental l ension or Analys X	Knowledge <u>1-P</u>	_
	55.43			

KA Statement: Knowledge of the operational implications of the following concepts as they apply to the Fuel Handling System: Limiting of load

ES-401	Writ	tten Examination (	Question Worksheet	For	rm-401-5
Examination	Outline C	Pross-reference:	Level Tier #	RO	SRO 2 2
			$K/\Delta = $	035.4	A2.01
			Importance Rating		4.6
Proposed Que	estion:	SRO# 18, SI	EE ATTACHED		
Proposed An	swer:	C			
Explanation (	(Optional)	SEE ATTAC	CHED		
Technical Re (Attach if not	ference(s)	EOP 0 Reac	tor Trip or Safety Injec	ction,	
Technical Re (Attach if not provided) Proposed refe	ference(s) t previous erences to	be provided to ap	tor Trip or Safety Injected Steam Generator Iso	etion, olation ion:	
Technical Re (Attach if not provided) Proposed refe Learning Obj	eference(s) t previous erences to jective:	be provided to ap	tor Trip or Safety Injected Steam Generator Iso plicants during examinati	etion, olation ion: s available)	
Technical Re (Attach if not provided) Proposed refe Learning Obj Question Sou	eference(s) t previous erences to jective: urce:	errorided to ap EOP 0 Reac EOP 2 Fault be provided to ap <u>LP0441/016</u> Bank # Modified Bank New	tor Trip or Safety Injected Steam Generator Iso plicants during examination (As INPO 29473 (Note	ction, olation ion: s available) e changes or a	uttach parent)
Technical Re (Attach if not provided) Proposed refe Learning Obj Ouestion Sou	eference(s) t previous erences to jective: urce: tory:	be provided to ap LP0441/016 Bank # Modified Bank New Last NRC Exam	tor Trip or Safety Injected Steam Generator Iso plicants during examination (Aso INPO 29473 (Note INPO 29473 Beave	etion, olation ion: s available) e changes or a er Valley 200	uttach parent)
Technical Re (Attach if not provided) Proposed refe Learning Obj Ouestion Sou Question His (Optional - Que NRC; failure to	eference(s) t previous erences to jective: urce: tory: stions valida provide the	be provided to ap LP0441/016 Bank # Modified Bank New Last NRC Examated at the facility since	tor Trip or Safety Injected Steam Generator Iso plicants during examination (Aso <u>INPO 29473</u> (Note n <u>INPO 29473 Beave</u> ce 10/95 will generally undergressitate a detailed review of events of even	etion, olation ion: s available) e changes or a er Valley 200 go less rigorous n very question)	uttach parent) 5 review by the
Technical Re (Attach if not provided) Proposed refe Learning Obj Ouestion Sou Question His (Optional - Que NRC; failure to Question Cog	eference(s) t previous erences to jective: nrce: tory: estions valida provide the gnitive Le	be provided to ap LP0441/016 Bank # Modified Bank New Last NRC Exam ated at the facility since information will neces vel: Memory of Comprehe	tor Trip or Safety Injected Steam Generator Isected Steam Generation (Asected Steam Generation (Note Contemported Steam) (Note Con	tion, olation ion: s available) e changes or a er Valley 200 go less rigorous r very question) ge	uttach parent) 5 review by the
Technical Re (Attach if not provided) Proposed refe Learning Obj Ouestion Sou Question His (Optional - Que NRC; failure to Question Cos 10 CFR Part	eference(s) t previous erences to jective: urce: tory: estions valida provide the gnitive Le 55 Conter	e provided to ap be provided to ap <b>LP0441/016</b> Bank # Modified Bank New Last NRC Exant ated at the facility since information will neces vel: Memory of Comprehent: 55.41	tor Trip or Safety Injected Steam Generator Isected Steam Generator Isected Steam Generator Isected Steam Generator Isected Steam Generation (Asected Steam Generation of Contemposities and the Information of Contemposities	tion, olation ion: s available) e changes or a cr Valley 200 go less rigorous r very question) ge  ge 2-DR	attach parent) 5 review by the

KA Statement: Ability to (a) predict the impact of the following malfunctions or operations on the S/G; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or opertions:Faulted or ruptured S/G's

ES-401 Writ	tten Examination (	Question Worksheet	Form-	401-5
Examination Outline C	cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2.1.40	SRO 3 3.9
Proposed Question:	SRO# 19, SI	EE ATTACHED		
Proposed Answer: Explanation (Optional) Technical Reference(s) (Attach if not previous) provided)	D SEE ATTAC TS 3.9.4 RH and Bases, RP 1C Refu	CHED R and Coolant Circula eling step 3.9.1	ation - High Wat	er Level
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	LP3345/002		As available)	
Question Source:	Bank # Modified Bank New	<u>INPO 18487</u> (No	te changes or atta	ch parent)
Question History:	Last NRC Exan	n <u>INPO 18487 San</u>	Unotre 2000	1 4
(Optional - Questions valid: NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally under essitate a detailed review of e	rgo less rigorous revi every question)	ew by the
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Knowle ension or Analysis	dge <u>1-B</u>	
10 CFR Part 55 Conter	nt: 55.41	X		
	55.43	X		

KA Statement: Knowledge of refueling administrative requirements.

ES-401 Wr	ES-401 Written Examination Question Worksheet		Form-401-5	
Examination Outline Cross-reference:		Level Tier # Group # K/A # Importance Rating	RO 2.1.	SRO 3 45 4.3
Proposed Question:	SRO# 20, SI	EE ATTACHED		
Proposed Answer: Explanation (Optional	A ): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): sly <b>EOP 0 Reac</b>	tor Trip or Safety Inje	ction Step 25	
Proposed references to	be provided to ap	plicants during examinat	ion:	
Learning Objective:	LP0465/008	(A	s available)	
<b>Question Source:</b>	Bank #	PBNP EXAM BAN	K	
	Modified Bank New	(Not	e changes or a	ttach parent)
Question History:	Last NRC Exan	n Point Beach 2003		
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	eview by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge	-
10 CFR Part 55 Conte	nt: 55.41	X		
	55.43	X		

KA Statement: Ability to identify and interpret diverse indications to validate the response of another indication

ES-401 Wri	tten Examination (	Question Workshee	t Form	n-401-5
Examination Outline C	Cross-reference:	Level Tier # Group # K/A # Importance Rati	RO 2.2.2	SRO 3 15 4.3
Proposed Question:	SRO# 21, SI	EE ATTACHED		
Proposed Answer:	D			
Explanation (Optional)	): SEE ATTAC	CHED		
Technical Reference(s) (Attach if not previous provided)	): ly ly Unit 1 CCW Unit 2 CCW	001 CCW Flow F n step 5.2 / drawing 110E0 / drawing 110E0	Path Valve Positio 18 Sh. 3 29 Sh. 3	n
Proposed references to applicants during exam	be provided to nination:	Unit 1 CCW dra Unit 2 CCW dra	awing 110E018 S awing 110E029 S	h. 3 h. 3
Learning Objective:	2.2.15 in SD86.	.2	(As available)	
Question Source:	Bank # Modified Bank New	NEW	(Note changes or at	tach parent)
Question History:	Last NRC Exan	n <b>NEW</b>		
(Optional - Questions valid NRC; failure to provide the	ated at the facility sind information will nece	ce 10/95 will generally essitate a detailed review	undergo less rigorous re w of every question)	view by the
Question Cognitive Le	vel: Memory o Comprehe	or Fundamental Kno ension or Analysis	owledge <u>3-SPR</u>	
10 CFR Part 55 Conter	nt: 55.41	X		
	55.43	X		

KA Statement: Ability to determine the expected plant configuration using design and configuration control documentation, such as drawings, line-ups, tag-outs, etc.

Examination Outline Cross-reference:       Level       RO       SRO         Tier #	ES-401 Writt	ES-401 Written Examination Question Worksheet		Form-401-5	
Proposed Question:       SRO# 22, SEE ATTACHED         Proposed Answer:       C         Explanation (Optional):       SEE ATTACHED         Technical Reference(s):       OI 140B Standard Radioactive Liquid batch relese - Waste Distillate Tanks, RAM 3.1 Radioactive Waste Liquid Discharge Permits         Proposed references to be provided to applicants during examination:	Examination Outline Cross-reference:		Level Tier # Group # K/A # Importance Rating	RO 2.3	SRO 3 3.6 3.8
Proposed Answer:       C         Explanation (Optional):       SEE ATTACHED         Technical Reference(s):       OI 140B Standard Radioactive Liquid batch relese - Waste Distillate Tanks, RAM 3.1 Radioactive Waste Liquid Discharge Permits         Proposed references to be provided to applicants during examination:	Proposed Question:	SRO# 22, SI	EE ATTACHED		
Technical Reference(s):       OI 140B Standard Radioactive Liquid batch relese - Waste Distillate Tanks, RAM 3.1 Radioactive Waste Liquid Discharge Permits         Proposed references to be provided to applicants during examination:	Proposed Answer: Explanation (Optional):	CSEE ATTAC	THED		
Proposed references to be provided to applicants during examination:         Learning Objective:       2.3.6 in SD86.3       (As available)         Ouestion Source:       Bank #       INPO 27356         Modified Bank       Modified Bank       (Note changes or attach parent)         New       INPO 27356 Ginna 2004         Question History:       Last NRC Exam       INPO 27356 Ginna 2004         (Optional - Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC: failure to provide the information will percessitate a detailed review of every question)	Technical Reference(s): (Attach if not previously provided)	OI 140B Sta Distillate Ta RAM 3.1 Ra	ndard Radioactive Liq nks, ndioactive Waste Liqui	uid batch relo d Discharge P	ese - Waste Permits
Learning Objective:       2.3.6 in SD86.3       (As available)         Ouestion Source:       Bank #       INPO 27356         Modified Bank       Modified Bank       (Note changes or attach parent)         New       Last NRC Exam       INPO 27356 Ginna 2004         (Optional - Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC: failure to provide the information will percessitate a detailed review of every question)	Proposed references to l	be provided to ap	plicants during examina	tion:	
Ouestion Source:       Bank #       INPO 27356         Modified Bank       Modified Bank       (Note changes or attach parent)         New       INPO 27356 Ginna 2004         Question History:       Last NRC Exam       INPO 27356 Ginna 2004         (Optional - Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC: failure to provide the information will percessitate a detailed review of every question)	Learning Objective:	2.3.6 in SD86.3	(A	s available)	
(Optional - Questions validated at the facility since 10/95 will generally undergo less rigorous review by the NRC: failure to provide the information will necessitate a detailed review of every question)	Ouestion Source:	Bank # Modified Bank New Last NRC Exan	INPO 27356 (Not	e changes or a <b>a 2004</b>	ttach parent)
TARC, famure to provide the information will necessitate a detailed review of every question)	(Optional - Questions valida NRC; failure to provide the i	ted at the facility sind	ce 10/95 will generally under essitate a detailed review of e	go less rigorous r very question)	eview by the
Question Cognitive Level:Memory or Fundamental Knowledge Comprehension or Analysis3-SPK	Question Cognitive Lev	el: Memory o Comprehe	or Fundamental Knowled ension or Analysis	lge	-
10 CFR Part 55 Content: 55.41 X	10 CFR Part 55 Content	:: 55.41	X X		

KA Statement: Ability to approve release permits

ES-401 Wri	tten Examination (	Question Workshe	et For	rm-401-5
Examination Outline O	Cross-reference:	Level Tier # Group # K/A #	RO 2.3	SRO 3
		Importance Rat	ting	3.8
Proposed Question:	SRO# 23, SI	EE ATTACHED		
Proposed Answer:	A			
Explanation (Optional	): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): NP 4.2.19 End Sly Controlled A	ntry Requiremen Areas section 4.18	ts into Various Rad 3.2.d 6th bullet	liologically
Proposed references to	be provided to ap	plicants during exa	amination:	
Learning Objective:	2.3.13 in SD86.	.3	(As available)	
Question Source:	Bank # Modified Bank New	NEW	(Note changes or a	attach parent)
Question History:	Last NRC Exan	n <b>NEW</b>		
(Optional - Questions valid NRC; failure to provide the	lated at the facility sind e information will nece	ce 10/95 will generally essitate a detailed revie	y undergo less rigorous ew of every question)	review by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Kr ension or Analysis	nowledge <u>1-P</u>	_
10 CFR Part 55 Conte	nt: 55.41	X		_
	55.43	X		

KA Statement: Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc

ES-401 Wr	itten Examination (	Question Worksheet	Form	n-401-5
Examination Outline	Cross-reference:	Level Tier # Group # K/A # Importance Rating	RO 2.4.	SRO 3 5 4.0
Proposed Question:	SRO# 24, SI	EE ATTACHED		
Proposed Answer: Explanation (Optional	D ): SEE ATTAC	THED		
Technical Reference(s (Attach if not previous provided)	(): Sly <b>OM 3.7 AO</b> and 4.10.4 N	P EOP Procedure Sets OTE	Use and Adher	ance 4.2.4
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	LP1995/013	(A	s available)	
Question Source:	Bank # Modified Bank New	PBNP BANK (Not	te changes or att	ach parent)
Question History:	Last NRC Exan	h PBNP LOR EXAL	M BANK	
(Optional - Questions valid NRC; failure to provide th	dated at the facility sind e information will nece	ce 10/95 will generally under essitate a detailed review of e	go less rigorous re- every question)	view by the
Question Cognitive Lo	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis X	dge <b>2-DR</b>	
IU CFK Part 35 Conte	55.43	X		

KA Statement: Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions.

ES-401 Wri	tten Examination	Question Worksheet	For	m-401-5
Examination Outline Cross-reference:		Level Tier # Group # K/A # Importance Rating	RO 2.4.	SRO 3 21 4.6
Proposed Question:	SRO# 25, SI	EE ATTACHED		
Proposed Answer: Explanation (Optional	B ): SEE ATTAC	CHED		
Technical Reference(s (Attach if not previous provided)	): sly CSP-ST.0 C	ritical Safety Function	Status Trees	
Proposed references to	be provided to ap	plicants during examina	tion:	
Learning Objective:	LP1997/010	(A	s available)	
Ouestion Source:	Bank # Modified Bank New	PBNP BANK (Not PBNP LOR Exam	te changes or at	tach parent)
(Optional - Questions valid NRC; failure to provide the	lated at the facility since information will nece	ce 10/95 will generally under	go less rigorous revery question)	eview by the
Question Cognitive Le	evel: Memory o Comprehe	or Fundamental Knowled ension or Analysis	dge <b>1-P</b>	-
10 CFR Part 55 Conte	nt: 55.41 _	X		
	55.43	X		

KA Statement: Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.

1. 2009 ILT SRO 1 Given the following:

- Unit 2 has experienced a large break LOCA inside containment
- The crew is in the process of aligning RHR per EOP-1.3, "Transfer to Containment Sump Recirculation - Low Head Injection"
- RWST level is 32% and slowly lowering
- The STA informs the OS2 that conditions exist for a Red path for Heat Sink

Which of the following is the correct procedure flowpath?

- A. Transition to CSP-H.1, "Response to Loss of Secondary Heat Sink."
- B. Enter CSP-H.1, "Response to Loss of Secondary Heat Sink" but continue to perform actions in parallel from EOP-1.3 to align sump recirculation.
- C. Remain in EOP-1.3 until at least one train of RHR is ready for recirculation and then implement CSP-H.1, "Response to Loss of Secondary Heat Sink". Return to EOP-1.3 when RWST level reaches 9%.
- D. Remain in EOP-1.3 until at least one train of RHR is aligned and sump recirculation has been verified. Implement CSP-H.1, "Response to Loss of Secondary Heat Sink" if the Red path condition still exists.

Explanation:

A: Incorrect per note prior to step, would be required when in most other procedures.

- B: Incorrect per note prior to step. Would be allowed after in the EOP, after step 21
- C: Incorrect, with RWST level <34% CSPs are not implemented until after a train is aligned. 9% RWST level is when spray pumps are secured.

D: Correct per notes prior to step 1 and after step 20 but prior to step 31.

## 10CFR55.43 Statement met:

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal and emergency situations.

2. 2009 ILT SRO 2

Unit 2 is at 100% with the following indications:

- 2TR-2001 Temperature Monitor annunciator is LIT.
- No other annunciators are lit.

	<u>'A' RCP</u>	<u>'B' RCP</u>
- Highest Motor Bearing	60°C	63°C
- Stator Winding	122°C	69°C
- RCP #1 Seal Outlet Temp	99°F	101°F
- Loop Flow	100%	100%
- RCP Current (AC Amps)	603 A	601 A

Which of the following actions must be taken?

- A. Shut down the unit using AOP-17A, "Rapid Power Reduction", and then trip 'A' RCP after the reactor is shutdown.
- B. Enter AOP-1B, "Reactor Coolant Pump Malfunction", and continue to monitor RCP status.
- C. Trip the reactor, carry out EOP immediate actions, and then trip 'A' RCP.
- D. Immediately trip 'A' RCP, then trip the reactor and perform EOP immediate actions.
- A: Incorrect, this would be the correct action per step 16 of AOP-1B if the RCP is found to be inoperable for reasons which are not covered by RCP trip criteria.
- B: Correct, without any other indications to validate the stator temperature the correct action is to continue to monitor the RCP.
- C: Incorrect, stator temperature needs to be backed up with a cubicle smoke alarm or abnormal amperage
- D: Incorrect, if the RCP needed to be tripped, the reactor would be tripped first.

10CFR55.43 Statement met:

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

3. 2009 ILT SRO 3 Given the following:

- Unit 1 is operating at 100% with normal letdown in service.
- 1P-11A CC pump is running with the 'A' CC HX lined up to Unit 1
- CC surge tank level is 34% and slowly lowering
- The PAB AO reports water coming from the Nonregen HX cubicle
- The following annunciators are LIT:
   "Nonregen HX Letdown Outlet Temperature High"
   "1T-12 CC Surge Tank Level High or Low"

Which of the following is the procedurally directed action and the reason for that action?

- A. Start a reactor makeup water services pump and open the emergency makeup valve 1CC-815 to restore CC surge tank level.
- B. Place CC pumps in pullout and then trip the reactor due to loss of CC suction source.
- C. Start the standby Component Cooling Water pump to maintain CC flow.
- D. Isolate CVCS letdown to prevent overheating the demineralizers.

Explanation:

- A: Correct.
- B: Incorrect. Pumps tripped for surge tank level below 10%.
- C: Incorrect. Standby pump will start on low pressure if needed, priority is to isolate leak.
- D: Incorrect. Demineralizers would be automatically protected from high temperature by divert valve.

10CFR55.43 Statement met:

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal and emergency situations.

4. 2009 ILT SRO 4

Following a loss of all AC power to Unit 1, Operators are performing ECA 0.0, "Loss of All AC Power."

The following conditions exist:

- All switches are in PULLOUT per step 30.
- G01 EDG is aligned to 1A05 and 2A05 4160 VAC Safeguards Busses but is currently **NOT** operating.
- G02 EDG is OOS for an overhaul.
- G03 EDG is **NOT** operating.
- G04 EDG is **NOT** operating due to mechanical failure.

The following alarms are LIT:

- G01 Emergency Diesel Trip or Lockout
- G01 Emergency Diesel Generator
- G01 Overspeed Trip (local alarm)
- G03 Emergency Diesel Trip or Lockout
- G03 Emergency Diesel Generator
- G03 Generator Differential (local alarm)

As Unit OS, what actions are you going to direct?

- A. Reset G01 Emergency Diesel Generator from the Control Room per AOP-19B, "Unit 1 Train B Safeguards Bus Restoration" and energize 4160 Vac Safeguards bus 1A05.
- B. Reset G01 Emergency Diesel Generator locally per ECA 0.0 and energize 4160 Vac Safeguards bus 1A05.
- C. Reset G03 Emergency Diesel Generator from the Control Room per ECA 0.0 and energize 4160 Vac Safeguards bus 1A06.
- D. Reset G03 Emergency Diesel Generator locally per AOP-19B, "Unit 1 Train B Safeguards Bus Restoration" and energize 4160 Vac Safeguards bus 1A05.

- A: Incorrect. AOP 19B is for wrong train, but does contain actions to locally reset diesel generators. G01 does align to 1A05.
- B: Correct. G01 is restored locally per ECA 0.0 Attachment A and aligned to 1A05.
- C: Incorrect. G03 is restored locally per ECA 0.0 Attachment C and aligned to 1A06.
- D: Incorrect. AOP-19B could be used to reset G03 locally for restart, including generator differential. Wrong bus alignment.
10CFR55.43 Statement met:

Given the following conditions:

- Unit 1 'B' S/G is faulted inside containment
- EOP 0, "Reactor Trip or Safety Injection" immediate actions are complete and verified.
- 1MS-2018 'A' MSIV is open
- 1MS-2017 'B' MSIV is shut
- S/G A steam flow is 0.6 E6 lbm/hr and lowering
- S/G B steam flow is 1.0 E6 lbm/hr and stable
- Tave is 523°F and lowering
- Containment pressure is 5 psig and rising

The following annunciators are **LIT**:

- 1C03 1D 4-10 Steam Line A Isolation
- 1C03 1D 4-11 Steam Line B Isolation

What actions, if any, will the SRO direct regarding the open MSIV?

- A. Direct the board operator to shut the 'A' MSIV per OM 3.7, "AOP and EOP Procedure Sets Use and Adherence."
- B. Direct the PAB AO to shut the 'A' MSIV locally per EOP 2, "Faulted Steam Generator Isolation" Attachment A, "Locally Shut MSIVs."
- C. Direct that the MSIV not be shut until directed by EOP 2, "Faulted Steam Generator Isolation."
- D. The 'A' MSIV is NOT required to be shut at this time because the 'B' S/G is the one faulted.

Explanation:

- A: Correct. Annunciators indicate that both MSIVs should be shut. Shift supervision can direct required manual actions under these conditions.
- B: Incorrect. MSIV should be attempted to be shut from the control boards first.
- C: Incorrect. EOP 0 Att A will direct MSIVs to be shut if necessary.
- D: Incorrect. Both MSIVs should be shut based on setpoints and procedure guidance.

10CFR55.43 Statement met:

Unit 1 is at Rated Thermal Power and has experienced a loss of DC power to 1DY04 Yellow Instrument Bus Inverter with a failure to automatically shift to its back-up power supply.

In addition to entering AOP 0.2, "Loss of Safety Related Instrument Buses", which of the following will also be directed by the OS?

- A. Enter AOP 1D, "CVCS Malfunction" to take manual control of charging pumps.
- B. Enter AOP 2B, "Feedwater System Malfunction" to take manual control of the 'B' Main Feed Regulating Valve.
- C. Enter AOP 1A, "Reactor Coolant System Leak" to manually shut PORV 1RC-431C.
- D. Enter AOP 2A, "Secondary Coolant Leak" to manually shut the 'B' S/G Atmospheric valve.

Explanation:

- A: Incorrect. Correct AOP for charging system malfunction, which would have to be addressed in other attachments in AOP 0.2.
- B: Correct. AOP 0.2 Attachment D actions to address effect of loss of instrument bus on controlling S/G instruments. AOP 2B would also be entered to stabilize the feedwater system.
- C: Incorrect. PORV would not open with this failure. Correct AOP for a PORV failing open.
- D: Incorrect. Atmospheric Steam dump would not open with this failure. Correct AOP for addressing an open atmospheric.

10CFR55.43 Statement met:

T-104B, 'B' Waste Distillate Tank, is aligned to discharge to the Unit 1 overboard. Shortly after commencing the discharge the following conditions exist:

- RE-223, Waste Distillate Tank Overboard Monitor, goes into High Alarm. -1RE-229 SW Overboard Monitor Unit 1 is **NOT** in alarm

What automatic actions, if any, will occur, and what actions will the OS direct?

- A. BE-LW-15, Waste Distillate Tank Overboard valve will automatically close. The OS will direct the PAB AO to secure the discharge lineup; the chemistry department will sample the 'B' Waste Distillate and issue a new discharge permit if tank levels allow for release.
- B. BE-LW-15, Waste Distillate Tank Overboard valve will automatically close. The OS will direct the PAB AO to isolate RE-223 and flush Rad Monitor. If the alarm clears during the flush, direct the AO to recommence the discharge. Otherwise, direct chemistry to resample the tank and continue the discharge after RE-223 High Alarm setpoint is adjusted.
- C. No automatic actions will occur. The OS will direct the PAB AO to secure the discharge lineup and place the tank on recirc; the chemistry department will sample the 'B' Waste Distillate Tank and issue a new discharge permit if tank levels allow for release.
- D. No automatic actions will occur. The OS will direct the PAB AO to shut BE-LW-15, Waste Distillate Tank Overboard; direct chemistry to resample the tank and recommence the discharge after adjusting RE-223 High Alarm setpoint.

Explanation:

- A: Correct, valve automatically closes and the lineup is secured IAW OI-140B. Then the tank is placed on recirc and resampled. If the results of the sample indicate the tank is satisfactory, then a new discharge permit is issued by chemistry and a new discharge of the tank may commence.
- B: Incorrect, WL-15 will close, but there is no allowance for purging the radiation monitor to clear a high alarm. Purging the radiation monitor is a plausible activity, since flushing and purging are common activities associated with lowering radiation levels. If the examinee assumes that a purge is the proper action, then it follows that the discharge could continue. Carrying this postulated series of events to its logical conclusion; chemistry could then resample the tank and recommend a higher alarm setpoint.

C. Incorrect, WL-15 automatically shuts, remaining actions are correct.

D: Incorrect, WL-15 automatically shuts, remaining actions plausible since

performance of these actions would allow for the continued release of the tank.

10CFR55.43 Statement met:

Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.

A LOCA has occurred on Unit 1 and plant parameters are as follows:

- RCS pressure is 1450 psig and stable
- RCS hot leg temperature is 510°F and slowly lowering
- Containment pressure is 3.2 psig and slowly rising
- RCPs are secured
- The procedure in effect is EOP 1.2 "Small Break LOCA Cooldown and Depressurization"

What is the procedural limit, if any, on cooldown rate and the basis for that limit?

- A. No limit on cooldown rate based on minimizing the radioactivity release.
- B. Limit cooldown to 200°F/hr based on minimizing thermal stress on the pressurizer.
- C. Limit cooldown to 100°F/hr based on minimizing thermal stress on the reactor vessel.
- D. Limit cooldown to 100°F/hr based on accident analysis for small break LOCA.

Explanation:

- A: Incorrect. EOP-3 directs cooldown at maximum rate for SGTR. EOP 1.2 directs actions for LOCA inside containment.
- B: Incorrect. This is the Technical Specifications cooldown rate for the pressurizer.
- C: Correct. Maximum cooldown rate is chosen to not exceed RCS TS cooldown limit.
- D: Incorrect. Correct cooldown rate but wrong reason, cooldown rates are not based on accident analysis.

10CFR55.43 Statement met:

Facility operating limitations in the technical specifications and their bases

The following Unit 2 conditions exist:

- A Loss of Off Site power has occurred due to a seismic event.
- Unit 2 reactor is tripped.
- Diesel Generators have started and are supplying electrical power to Unit 2 Safeguards busses.
- Both CSTs are slowly losing inventory and RCS cooldown needs to be completed as expeditiously as possible.
- EOP-0.1, "Reactor Trip Response", has been completed.

Which of the following describes the correct procedure flowpath?

- A. Transition to OP-3C, "Hot Standby To Cold Shutdown", and cooldown to cold shutdown.
- B. Transition to EOP-0.2, "Natural Circulation Cooldown", and complete cooldown to cold shutdown using EOP-0.2
- C. Transition directly to EOP-0.3, "Natural Circulation Cooldown With Steam Void in Vessel (RVLIS Available)", and continue to cold shutdown.
- D. Transition to EOP-0.2, "Natural Circulation Cooldown", and perform actions until directed to transition to EOP-0.3, "Natural Circulation Cooldown With Steam Void in Vessel (RVLIS Available)", and continue to cold shutdown.

Explanation:

- A: Incorrect, OP-3C would be used for cooldown if power was available.
- B: Incorrect, EOP-0.2 will be entered and the first 17 steps performed but due to lowering CST levels, rapid cooldown is needed and EOP-0.3 will be used to complete the cooldown.
- C: Incorrect, EOP-0.3 cannot be directly entered from EOP-0.1
- D: Correct, sequence is to perform EOP-0.2 steps then transition to EOP-0.3 for most rapid cooldown.

10CFR55.43 Statement met:

Given the following conditions:

- A steam line fault has occurred on Unit 1
- CSP P.1 "Response to Pressurized Thermal Shock" is the procedure in effect
- RCPs have been secured
- Letdown is isolated
- Both SI pumps are secured
- Containment pressure is 4.5# and lowering
- RCS pressure is being lowered with one PORV manually open
- The following annunciators are LIT
  - RCS SUBCOOLING MARGIN ALERT
  - PZR HIGH LEVEL
  - PRESSURIZER LEVEL SETPOINT DEVIATION

What action should the SRO direct to address the highest priority condition?

- A. Start SI pumps to restore subcooling
- B. Secure charging to lower pressurizer level
- C. Shut the PORV to stop depressurization
- D. Secure pressurizer heaters to stabilize temperature

Explanation:

- A: Incorrect. Foldout page directs starting SI pumps on loss of subcooling, however PORV should be shut first to see if subcooling will return
- B: Incorrect. At least one charging pump should be left running
- C: Correct.
- D: Incorrect. Caution preceding next step directs temperature and pressure to be held stable. Heaters are necessary to maintain pressurizer saturated.

10CFR55.43 Statement met:

Unit 1 is in a refueling outage with half of the core unloaded to the Spent Fuel Pool and Unit 2 is at Rated Thermal Power.

The Boric Acid Storage Tanks (BAST) contain a 3.75% boric acid solution and are in a normal alignment.

The following indications were reported by the Unit 1 Reactor Operator:

- 'A' BAST level is 42% with a temperature of 87°F
- 'B' BAST level is 95% with a temperature of 88°F
- 'C' BAST level is 85% with a temperature of 65°F
- Unit 1 RWST is drained for maintenance.

Using the given references, what actions, if any, should be taken?

- A. TLCO 3.5.1 is **met** for **both** units.
- B. Declare TLCO 3.5.1 **NOT** met for Unit 1 and enter only TRMAC 3.5.1.A for Unit 1.
- C. Declare TLCO 3.5.1 **NOT** met for Unit 2 and enter only TRMAC 3.5.1.C for Unit 2.
- D. Declare TLCO 3.5.1 **NOT** met for **both** units and enter TRMAC 3.5.1.A for Unit 1 and TRMAC 3.5.1.C for Unit 2.

Explanation:

- A: Incorrect. TRM 3.5.1 is NOT met, you only have 6989 gal of the required 7050
- B: Correct. Use TRM and TLB's to calculate around 6900 gal of acid.
- C: Incorrect. TRM 3.5.1.C should not be entered because Unit 2 has sufficient BAST volume available. (9107 gal) U2 also has the RWST available.
- D: Incorrect. TRM 3.5.1.C should not be entered because Unit 2 has sufficient BAST volume available as well as the RWST.

10CFR55.43 Statement met:

Facility operating limitations in the technical specifications and their bases.

Given the following conditions:

- A reactor trip has occurred on Unit 2
- The crew has transitioned to EOP 0.1 "Reactor Trip Response"
- RCS pressure is 2155 psig and slowly lowering
- RCS temperature is stable at 546°F
- Charging flow has been adjusted to 139 gpm
- While performing step 12 to check pressurizer level, the CO reports that level is 11% and slowly lowering.

What action will the SRO direct?

- A. Ensure all 3 charging pumps are at maximum speed and continue to step 13.
- B. Manually isolate letdown and continue to step 13.
- C. Manually start both SI pumps and return to EOP 0 at step 5.
- D. Initiate SI and return to EOP-0 at step 4.

Explanation:

- A: Incorrect. Plausible to maximize charging to stabilize pressurizer level, but not all 3 pumps in max (180 gpm) due to meter limitations of 140 gpm.
- B: Incorrect. Plausible to isolate letdown to stabilize pressurizer level, but it would have isolated at 12% pressurizer level
- C: Incorrect. Plausible to start SI pumps but procedure directs SI to be initiated
- D: Correct. Per EOP 0.1 foldout page

### 10CFR55.43 Statement met:

During the performance of EOP-1.3, "Transfer To Containment Sump Recirculation - Low Head Injection", the SI test line is isolated.

Which of the following correctly describes the actions which will be directed IAW EOP-1.3 to protect the Containment Spray (CS) pumps and what is the reason for these actions?

- A. Direct the CO to secure the CS system prior to isolating the SI test line. SI test line is isolated to prevent backflow of sump recirc water into the CS system.
- B. Direct the CO to verify CS pump discharge valves open prior to isolating the SI test line. Opening a discharge valve prevents CS system overpressurization.
- C. Direct the CO to align the CS system to RHR Pump discharge prior to isolating the SI Test Line. SI test line is isolated to ensure maximum sump recirc flow.
- D. Direct the CO to maintain SI Pump discharge valves open to prevent overpressurization of the CS system while SI test line is isolated. Opening a discharge valve prevents lifting of relief valves in the CS system while on sump recirc.

Explanation:

- A: Incorrect, while securing spray would protect the pumps, this is not directed.
- B: Correct, CS discharge valves are verified open to prevent overpressurizing CS.
- C: Incorrect, incorrect reason for isolating test line, although plausible from a maximum core cooling standpoint, and incorrect method for protecting CS pumps.
- D: Incorrect, incorrect way to protect the CS system using SI and incorrect reason for doing so.

10CFR55.43 Statement met:

14. 2009 ILT SRO 14 Given the following:

- P-32B SW Pump was started.
- After P-32B was successfully started, P-32D SW pump was secured.
- "North or South Service Water Header Pressure Low" alarm is LIT.
- "G01 Emer Diesel Cooler Low Flow" alarm is LIT.
- "G02 Emer Diesel Cooler Low Flow" alarm is LIT.
- Service Water Header pressure is 47 psig and stable.
- AO reports P-32D SW Pump shaft is rotating backwards.

What actions will be directed by the SRO?

- A. ENSURE P-32A, B and C SW Pumps are operating and isolate the North SW Pump header. Perform Attachment A of AOP 9A, "Service Water Malfunction", to shift loads to the alternate header.
- B. Start additional SW pumps to restore SW Header pressure >50 psig. Place P-32D SW Pump in pullout and isolate its discharge valve per AOP 9A, "Service Water Malfunction."
- C. Start additional SW pumps to restore SW Header pressure to >50 psig and perform Attachment B of AOP 9A, "Service Water Malfunction", to address SW flooding concerns.
- D. Attempt to restore SW Header pressure while performing Attachment E of AOP 9A, "Service Water Malfunction", to secure G01 and G02 EDG's for a loss of Service Water cooling.

Explanation:

- A: Incorrect. Actions are taken to isolate a header for a major leak, which could be caused by starting a SW pump. Attachment A is performed when isolating a SW header.
- B: Correct. Per AOP-9A start pumps to restore pressure and isolate discharge of recently secured SW pumps.
- C: Incorrect. Starting pumps is correct action to clear alarm. Flooding not correct with conditions given, but plausible due to recently starting a pump can pertibate system.
- D: Incorrect. Actions are from AOP 9A if total loss of SW flow occurs. Plausible distractor due to G01 and G02 low flow alarms in.

10CFR55.43 Statement met:

During the performance of TS 30, "High and Low Head Safety Injection Check Valve Leakage Test (Cold Shutdown) Unit 1", for U1R30, the measured leak rate through 1SI-853A, Low Head SI Core Deluge Check Valve, was determined to be 2.4 GPM.

Using the given reference, which of the following is the **lowest** leak rate that would result in an **unacceptable** leak rate for the <u>next</u> TS 30, performed during U1R31 for 1SI-853A?

- A. 3.0 gpm
- B. 3.5 gpm
- C. 4.0 gpm
- D. 4.8 gpm

#### Explanation:

- A: Incorrect. Leak rates ≥1 gpm are allowable if, from one test to another leakage can change no more than 50% of the margin towards 5 gpm.
  3.7 gpm would be the max allowed.
- B: Incorrect. Max leak rate allowed would be 3.7 gpm, so it would be in limits.
- C: Correct. Max leak rate allowed is 3.7 gpm, so this exceeds limits.
- D: Incorrect. Max leak rate doubled would be 4.8 gpm.

10CFR55.43 Statement met:

Conditions and limitations in the facility license

Unit 2 was operating at 100% power near End of Life when at 0300 a malfunction forced a rapid load reduction to 94% power, where conditions stabilized. Control Bank 'D' rods were at 220 steps at the beginning of the transient.

Current indications at 0430 are:

Control Bank D Rods							
Demand		193 steps					
Rod C-7	IRPI	217 steps					
Rod G-3	IRPI	216 steps					
Rod G-11	IRPI	210 steps					
Rod K-7	IRPI	205 steps					

What actions, if any, are required to be taken?

- A. Rods are not in alignment and Reactor Engineering will be contacted for assistance to re-align Control Bank D per AOP 17A, "Rapid Load Reduction".
- B. No action required, the time limit for thermal stabilization after rod motion has not expired.
- C. Rods are not in alignment and entry into AOP 6B, "Stuck or Misaligned Rod" is required.
- D. Rods are not in alignment and entry into 0-SOP-RDC-001, "Leveling Rod Banks" is required.

Explanation:

- A: Incorrect. Rods are not in alignment, AOP 17A does not address rod misalignment.
- B: Incorrect. The temperature soak time is for 1 hour.
- C: Correct. Rods are more than 18 steps off, bank demand is <215 and power  $\geq$ 85%
- D: Incorrect. 0-SOP-RDC-001 does NOT apply with AOP entry in purpose 1.3.

#### 10CFR55.43 Statement met:

Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

Facility operating limitations in the technical specifications and their bases.

You are the Spent Fuel Pool Supervisor during fuel motion. While lowering a Fuel Assembly (F/A) into rack S-28, the Load Cell Watch informs you there was an unanticipated 300 pound load cell deflection with the F/A half-way into the SFP rack.

What actions are procedurally required to take place?

- A. Reactor Engineering will document the deflection on PBF-5008, "Fuel Assembly Load Deflection Log." No other inspections are required.
- B. Reactor Engineering will document the deflection on PBF-5008, "Fuel Assembly Load Deflection Log." A visual inspection shall be conducted by Reactor Engineering and documented on PBF-5152, "Irradiated Fuel Inspection Record."
- C. Reactor Engineering will contact Westinghouse to perform a load deflection analysis which will be attached to PBF-5008, "Fuel Assembly Load Deflection Log."
- D. Reactor Engineering will document the deflection on PBF-5008, "Fuel Assembly Load Deflection Log." A core design change will be required since the F/A can not be used.

Explanation:

- A: Incorrect. This is what we do for a >50# defection up to 250#.
- B: Correct. This is required for a 250# or greater deflection.
- C: Incorrect. Westinghouse is not required per procedure. RE does the inspection.
- D: Incorrect. Correct form for documentation, F/A not required to be replaced.

10CFR55.43 Statement met:

Fuel handling facilities and procedures

18. 2009 ILT SRO 18 Given the following conditions:

- A reactor trip and safety injection have occurred.
- RCS pressure is 1600 psig and LOWERING.
- PZR level is offscale LOW.
- Tavg is 500°F and LOWERING.
- Containment pressure is 4.5 psig and RISING.
- SG "A" pressure is 620 psig and LOWERING.
- SG "B" pressure is 600 psig and LOWERING.

Which of the following procedure flowpaths will be used to mitigate the event following EOP 0, "Reactor Trip or Safety Injection"?

- A. EOP 1, "Loss of Reactor or Secondary Coolant" and then EOP 2, "Faulted Steam Generator Isolation."
- B. EOP 2, "Faulted Steam Generator Isolation" and then EOP 1, "Loss of Reactor or Secondary Coolant."
- C. EOP 2, "Faulted Steam Generator Isolation" and then ECA 2.1, "Uncontrolled Depressurization of Both Steam Generators."
- D. EOP 1, "Loss of Reactor or Secondary Coolant" and then ECA 2.1, "Uncontrolled Depressurization of Both Steam Generators."

Explanation:

- A: Incorrect. Transition to EOP 2 prior to getting to EOP 1
- B: Incorrect. Transition to EOP 1 would be incorrect with 2 faulted S/G's.
- C: Correct
- D: Incorrect. Transition to ECA 1.2 occurs from EOP 2. EOP 1 would not be entered due to the size of the breaks.

10CFR55.43 Statement met:

During refueling operations, Technical Specification 3.9.4 Residual Heat Removal (RHR) and Coolant Circulation - High Cavity level allows RHR cooling flow to be stopped for up to one (1) hour in an eight (8) hour period for certain activities.

Which of the following is an activity that permits securing RHR cooling?

- A. To keep unsupported assemblies from falling.
- B. When flow turbulence reduces visibility.
- C. To allow removal of reactor vessel upper internals.
- D. When moving fuel assemblies near the hot legs.

### Explanation:

- A: Incorrect. When loading FA's, we support them with adjacent FA's or the baffle plates.
- B: Incorrect. Flow turbulence is plausible, but it does not impair visibility.
- C: Incorrect. When removing the upper internals, the cavity level is too low for allowing RHR to be secured.
- D: Correct. TS and RP 1C both state RHR flow could shift the FA towards the hot leg opening.

10CFR55.43 Statement met:

Facility operating limitations in the technical specifications and their bases.

Fuel handling facilities and procedures.

Unit 2 was operating at 75% power when a plant transient resulted in a Reactor Trip and Safety Injection. EOP 0, "Reactor Trip or Safety Injection", is in progress. The RO announces that pressurizer level is 5% and slowly lowering.

Given the following additional indications:

- RCS pressure 1100 psig and slowly lowering.
- Pressurizer PORVs closed.
- Spray valves closed.
- Steam Generator levels normal.
- Steam Generator pressures normal.
- Containment pressure normal.
- Containment radiation normal.
- Sump 'A' level normal.
- RE 214, PAB Exhaust Monitor rising.
- Several PAB area radiation monitors rising.

What procedure will the SRO direct the crew to transition to?

- A. ECA 1.2, "LOCA Outside Containment."
- B. EOP 1.1, "SI Termination."
- C. EOP 1.3, "Transfer To Containment Sump Recirculation, Low Head Injection."
- D. EOP 0.0, "Rediagnosis."

Explanation:

- A: Correct. For given indications, the transition should address a LOCA outside containment
- B: Incorrect. EOP1.1 can be entered from EOP 0, but would not be correct for these conditions
- C: Incorrect. Would be the right strategy for a LBLOCA inside containment
- D: Incorrect. This procedure would be incorrect because the crew is still in EOP 0.

10CFR55.43 Statement met:

Plant conditions are as follows:

- 1HX-12A CC Heat Exchanger is aligned to Unit 1 and is the in-service HX.
- 2HX-12D CC Heat Exchanger is aligned to Unit 2 and is the in-service HX.
- CCW heat exchangers have been placed in the following alignment in order to validate design basis flowpath capabilities.
- HX-12B CC Heat Exchanger is aligned to Unit 2.
- HX-12C CC Heat Exchanger is aligned to Unit 1.

You are filling in the required valve positions for the relief crew Auxiliary Operators so they can perform 1-TS-CCW-001, "Component Cooling Water Flow Path Valve Position Verification (Monthly)."

EQUIP ID	DESCRIPTION	REQUIRED POSITION
1CC-726B	HX-12B CC HX Inlet From Unit 1	
1CC-726C	HX-12C CC HX Inlet From 1P-11A/B CC Pump	
1CC-728B	HX-12B CC HX Outlet To Unit 1 Equipment	
1CC-728C	HX-12C CC HX Outlet To Unit 1 Equipment	
2CC-726B	HX-12B CC HX Inlet From Unit 2	
2CC-726C	HX-12C CC HX Inlet From Unit 2	
2CC-728B	HX-12B CC HX Outlet	
2CC-728C	HX-12C CC HX Outlet To Unit 2 Equipment	

Using the given references, what required valve positions are you going to fill in?

- A. 1CC-726B SHUT, 1CC-726C SHUT, 1CC-728B SHUT, 1CC-728C SHUT, 2CC-726B OPEN, 2CC-726C OPEN, 2CC-728B OPEN, 2CC-728C OPEN.
- B. 1CC-726B OPEN, 1CC-726C OPEN, 1CC-728B OPEN, 1CC-728C OPEN, 2CC-726B SHUT, 2CC-726C SHUT, 2CC-728B SHUT, 2CC-728C SHUT.
- C. 1CC-726B OPEN, 1CC-726C SHUT, 1CC-728B OPEN, 1CC-728C SHUT, 2CC-726B SHUT, 2CC-726C OPEN, 2CC-728B SHUT, 2CC-728C OPEN.
- D. 1CC-726B SHUT, 1CC-726C OPEN, 1CC-728B SHUT, 1CC-728C OPEN, 2CC-726B OPEN, 2CC-726C SHUT, 2CC-728B OPEN, 2CC-728C SHUT.

Explanation:

A: Incorrect. Line up is for HX-12B and HX-12C to go to Unit 2.

B: Incorrect. Line up is for HX-12B and HX-12C to go to Unit 1.

C: Incorrect. Line up is correct for our normal dual unit line up.

D: Correct.

10CFR55.43 Statement met:

Chemistry has approved a discharge permit for the B Waste Distillate Tank which was sampled 4/4/2009 @ 1330.

Of the following, which is the <u>latest</u> time that the release could be started without Chemistry being required to draw another sample?

- A. 4/4/2009 @ 1830
- B. 4/5/2009 @ 0100
- C. 4/5/2009 @ 1215
- D. 4/5/2009 @ 1445

Explanation:

- A: Incorrect. Selected 6 hours, common number used in Technical Specifications.
- B: Incorrect. 12 hours is the time for gaseous release start.
- C: Correct. Release must start no more than 24 hours after sampling.
- D: Incorrect. >24 hours for liquid release start.

10CFR55.43 Statement met:

Radiological hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.

Unit 1 is currently in a refueling outage with a core offload in progress.

You are the Relief Crew SRO and have two Operators who need to hang a danger tag in containment on the 21' behind the LHRA refueling boundary.

What must be done prior to sending your Operators into the LHRA to hang the tag?

- A. Sign on specific Operations Outage RWP, establish radio communication with the Core Load Supervisor (CLS), and obtain authorization from the CLS prior to entering the area. Fuel may **NOT** be moved through the transfer tube.
- B. Sign on the fuel motion RWP. Entry is allowed with concurrence of the CLS. Fuel may be moved through the transfer tube.
- C. No entry into fuel motion LHRA's is allowed unless the fuel transfer tube gate valve is danger tagged shut.
- D. The Operations standing RWP allows for a short duration entry into areas posted due to fuel motion for such activities as hanging tags. Outage Manager permission is required as long as no fuel is actively being transferred between the SFP and Containment.

Explanation:

- A: Correct.
- B: Incorrect. Entry is allowed during fuel motion.
- C: Incorrect. CLS permission and LHRA controls apply, but fuel may not be moved while in the area.
- D: Incorrect. Operations standing RWP does not allow entry into these areas. CLS or SM permission is required not the outage manager. Direct communication is also required.

10CFR55.43 Statement met:

Radiological hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.

Unit 2 has experienced an accident resulting in a reactor trip and safety injection combined with a total loss of auxiliary feedwater to both steam generators.

CSP-H.1, "Response to Loss of Secondary Heat Sink" is the current procedure in effect.

Under which of the following conditions must this CSP procedure be immediately **suspended**?

- A. The STA reports a RED path exists for CSP-P.1, "Response to Pressurized Thermal Shock."
- B. The STA reports an ORANGE path exists for CSP-S.1, "Response to Nuclear Power Generation/ATWS."
- C. Auxiliary feedwater is restored to both steam generators at greater than 200 gpm.
- D. Power is lost to 2B-03 and 2B-04 480 volt Safeguards Buses and cannot be immediately restored.

Explanation:

- A: Incorrect. This transition would be wrong due to the loss of both 480 safeguards busses.
- B: Incorrect. CSP-S.1 is the highest CSP so examinee may select this answer.
- C: Incorrect. CSP H.1 could eventually be exited when AFW is restored, but it is procedurally directed.
- D: Correct. CSP procedures assume AC safeguards power exists on at least one train. If it does not, the CSP shall be suspended until power is restored to at least one 480v bus.

10CFR55.43 Statement met:

You have been directed by the OS to monitor the critical safety functions. The following plant conditions are noted:

- RCS pressure is 500 psig
- AFW flow is 125 gpm to each Steam Generator
- Core exit thermocouples indicate 800°F
- PR NIS reads 0%
- Intermediate range startup rate is zero
- Containment pressure is 27 psig
- RVLIS (narrow range) indicates 28 ft
- Steam generator level (wide range) in both S/Gs is 150 inches
- Neither reactor coolant pump is running

Which of the following procedures is the next one required to be performed?

- A. CSP S.2, "Response to Loss of Core Shutdown."
- B. CSP C.2, "Response to Degraded Core Cooling."
- C. CSP H.1, "Response to Loss of Secondary Heat Sink."
- D. CSP Z.1, "Response to High Containment Pressure."

Explanation:

- A: Incorrect. Applicable YELLOW path CSP, lower priority than C.2.
- B: Correct. C.2 ORANGE path is correct.
- C: Incorrect. H.1 not applicable, have >200 gpm AFW flow.
- D: Incorrect. Z.1 applicable ORANGE path lower priority than C.2.

10CFR55.43 Statement met:

RO: <u>Q#</u>	<u>Answer</u>	<u>Q#</u>	Answer	<u>Q#</u>	Answer	SRC <u>Q#</u>	): <u>Answer</u>
1	A	26	C	51	A	1	D
2	B	27	B	52	B	2	B
3	C	28	A	53	D	3	A
4	B	29	D	54	B	4	B
5	A	30	B	55	C	5	A
6	D	31	B	56	B	6	B
7	C	32	C	57	D	7	A
8	A	33	A	58	B	8	C
9	C	34	A	59	A	9	D
10	D	35	A	60	D	10	C
11 12 13 14 15	D C D B B	36 37 38 39 40	B D D C	61 62 63 64 65	B D D B	11 12 13 14 15	B D B B C
16 17 18 19 20	C A B D B	41 42 43 44 45	C C D B C	66 67 68 69 70	D B B B	16 17 18 19 20	C B C D A
21	A	46	A	71	C	21	D
22	D	47	C	72	C	22	C
23	B	48	A	73	B	23	A
24	C	49	B	74	C	24	D
25	A	50	B	75	B	25	B

## POINT BEACH May 2009 ILE Written Examination Answer Key

# POINT BEACH 2009 WRITTEN EXAMINATION LIST OF REFERENCE HANDOUTS PROVIDED

Related Question #	REFERENCE HANDOUTS PROVIDED	REVISION NUMBER		
RO 2	Steam Tables / Mollier Diagram	N/A		
RO 29	Blender 4.0 U2 ROD 6.6 ROD 8.6	Revision 0 Revision 12 Revision 12		
RO 75	SEP-1, Attachment C, "Degraded RHR System Capability"	Revision 7		
<u>NOTE</u> : The following reference handouts are for the SRO-only examination.				
86 (SRO 11)	TLB 5, "Tank Level Book," Boric Acid Storage Tanks TRM 3.5.1, "Chemical and Volume Control System"	Revision 9 Revision 5		
90 (SRO 15)	Technical Specification 5.5.16	U1 – Amendment 226 U2 – Amendment 206		
96 (SRO 21)	WEST 110E018 Sheet 3, "P&ID Auxiliary Coolant System Point Beach N. P. Unit 1"	Revision 41		