Draft Submittal

(Pink Paper)

1. Administrative Questions/JPMs
2. In-plant JPMs
3. Control Room JPMs (simulator JPMs)
4. Administrative Topics Outline ES-301-1
5. Control Room Systems and Facility Walk-Through Test Outline ES-301-2

CRYSTAL RIVER EXAM
50-302/2002-301

JAN. 28 - FEB. 6, 2002

Facility: Crystal River Unit 3 Exam Level: RO/SRO		Date of Examination: 01-28-2002 Operating Test No.: 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification	JPM – Perform an Estimated Critical Boron Calculation (ECB) /001A4.10/ 3.5/3.9 (OP-210 Enclosures 4/5)
	Plant Parameter Verification	JPM – Perform a Time to Boil Calculation / 025AA1.02/ 3.8/3.9 (OP-103H)
A.2	Surveillance Testing	JPM – Perform RCP Seal Data Sheet / 003A4.04/ 3.1/3.0 (SP-300 Enclosure 2 page 5)
A.3	Radiation Hazards	JPM – Determine worker stay times and dose requirements with survey maps/ 2.3.4/ 2.5/3.1 (RSP-101, and HPP-300)
A.4	SRO Emergency action levels and classifications	JPM – Determine Emergency Action Level and Complete the State of Florida Notification Message Form for Nuclear Power Plants/2.4.41/4.1 (EM-202)
A.4	RO Emergency Dose Assessment	JPM – Complete an OFF-Site Dose Assessment during Radiological Emergencies (Control Room Method) 2.3.10/ 2.9 (EM-204A)

Facility: Crystal River Unit 3 Exam Level: RO/SRO(I)	Date of Examination: 01-28-2002 Operating Test No.: 1

B.1 Control Room Systems

System/JPM Title/KA	Type Code*	Safety Function
a. CRD - Transfer Control Rod Group 1 to the Auxiliary Power Supply / 001K4.03/ 3.5/3.8/ (OP-502)	D, S	1
b. MUP – Perform an Emergency Boration / 024AA2.01/ 3.8/4.1 / (AP-490)	N, A, S	2
c. ECCS – Transfer ECCS suction to the RB sump / 009EK3.21/ 4.2/4.5 (EOP-14 Enclosure 19)	D, S	3
d. AFW – Emergency Feedwater Management / E14.EA1.3/ 3.6/3.8 / (EOP-14 Enclosure 7)	D, A, S	4
e. TURB – Trip Main Generator Output Breakers / A04.AA1.1/ 3.5/3.3 / (AP-510)	D, A, S	6
f. RPS – Energize RPS Channel/ 012A2.02/ 3.6/3.9 / (OP-507)	D, S	7
g. RM – Adjust RM-L2 setpoints for release/ 059AA1.01/ 3.5/3.5 / (OP-505)	N, S	9

B.2 Facility Walk-Through

a. VITAL ELEC – Energize VBIT-1A and supply the vital bus / 062A4.07/ 3.1/3.1 / (OP-703)	N	6
b. FS/OTSG – Transfer contaminated secondary inventory to FST/ 037AK3.07/ 4.2/4.4 / (EOP-14 Enclosure 9)	D	8
c. WG – Perform a Waste Gas release / G2.3.11/ 2.7/3.2 / (OP-412B)	D, A, R	9

*Type Codes: (D)irect, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, **PRA High System Importance

Facility: Crystal River Unit 3 Exam Level: SRO(U)	Date of Examination: 01-28-2002 Operating Test No.: 1

B.1 Control Room Systems

System/JPM Title/KA	Type Code*	Safety Function
a. MUP – Perform an Emergency Boration / 024AA2.01/ 3.8/4.1 / (AP-490)	N, A, S	2
b. ECCS – Transfer ECCS suction to the RB sump / 009EK3.21/ 4.2/4.5 (EOP-14 Enclosure 19)	D, S	3
c. AFW – Emergency Feedwater Management / E14.EA1.3/ 3.6/3.8 / (EOP-14 Enclosure 7)	D, A, S	4

B.2 Facility Walk-Through

a. FS/OTSG – Transfer contaminated secondary inventory to FST/ 037AK3.07/ 4.2/4.4 / (EOP-14 Enclosure 9)	D	8
b. WG – Perform a Waste Gas release / G2.3.11/ 2.7/3.2 / (OP-412B)	D, A, R	9

*Type Codes: (D)irect, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, **PRA High System Importance

Draft Submittal
(Pink Paper)

1. Operating Test Simulator Scenarios

CRYSTAL RIVER EXAM
50-302/2002-301

JAN. 28 - FEB. 6, 2002

Facility: CR-3 Scenario No.: 1 Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: 23% power with the Turbine at 1800 rpm, (set turbine 1st stage temperature to 365°F)

Turnover: Bring the Turbine on-line in accordance with OP-203

Event No.	Malfunction No.	Event Type*	Event Description
1		N	Turbine startup IAW OP-203 (BOP/SRO)
2	8	I	Fail RMA-6 high [Fail sample pump](SRO ITS call)
3	7	I / R	Fail Neutron Error, Man Rx control (OAC React man)
4	5/6	I	Fail Pzr level LT-1 (OAC)
5	4	C	Pzr small Steam space leak (19.5 gpm) (OAC)
6	3	C	RCV-13 fails to close (OAC) RCP/Rx trip
7	2	M	Large steam space leak (160 gpm)
8	1	C	MUP-1B shaft failure on ES (BOP)
9	1	C	DCP-1B fails to start on ES (BOP)
10	1	C	RCP-1D breaker will not trip (OAC)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: CR-3 Scenario No.: 2 Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: 100% power,
The following is OOS:
SWP-1C, RED TAG: "B" EDG, MUP-1A, and FWP-7 Racked out also.

SETUP: Rack out 3210 "B" EDG brk, tag for BKR Close Fuse, Start SWP-1A, and ensure "B" CC ventilation in service.

Turnover: On coming shift align RB ventilation to SW cooling

Event No.	Malfunction No.	Event Type*	Event Description
1		N	Align RB ventilation to SW cooling (BOP/SRO)
2	1	C	LOOP to "A" ES bus (SRO ITS/BOP AP-770)
3	2	I	RCS press fail high (OAC)
4	3	C	"B" OTSG 40 gpm tube leak (OAC)
5	4	I / R	ULD failure (OAC react man) down power
6	5	M	"B" OTSG 350 gpm tube rupture
7	6	C	MSLI / MFLI fail to actuate (OAC)
8	7	C	Turbine fails to trip (OAC)
9	8	C	"B" side MSSV fails open (BOP)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: CR-3 Scenario No.: 3 Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: 100% power, The following is OOS: SWP-1C, RED TAG: "B" EDG, MUP-1A, and FWP-7 Racked out also.
SETUP: Start SWP-1A, and ensure "B" CC ventilation in service, RCV -8 weeping RCDT level just below High alarm.

Turnover: Continue operating

Event No.	Malfunction No.	Event Type*	Event Description
1		N	High Alarm on RCDT pump IAW OP-407J
2	1	C	DPDP-5A fails (SRO ITS / BOP)
3	2	C	SWV-82 fails closed (BOP)
4	3	I	ICS fails to re-ratio (OAC)
5	4	C / R	"B" MFWP lube oil leak (OAC react man)
6	5	C	"A" MFWP trips (OAC)
7	6	C	ATWAS failure on Rx trip (OAC trip rods at Bkr)
8	7	C	EFP-2 failure (BOP)
9	8	M	Loss of all FW

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: CR-3 Scenario No.: SPARE (4) Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: 100% power with full ICS auto control

Turnover: A line crew is in the CR-3 switchyard performing routine maintenance on output breaker 1661's compressor. They will notify the control room when maintenance is complete.

The following equipment is OOS:
DHP-1A Pump packing/seal adjustment
EFP-3 Pump packing/seal adjustment
WTB-6B Motor pump alignment
ARP-1B Routine motor maintenance
RM-G27 For repair
Intake screen wash system due to mechanical damage from an intake crane accident

EDG-1A is running for SP-354A and is ready to shutdown.
OTSG "B" has a 3 GPD primary to secondary leak.

Event No.	Malfunction No.	Event Type*	Event Description
1		N	Shutdown EDG-1A IAW SP-354A (BOP/SRO ITS)
2	3	I	Fail Thot high (selected) (OAC)
3	4/5	C/R	"B" MFW pump trips no runback (OAC/SRO REACT)
4	6	I	Neutron error fails high (OAC)
5	8	M	Unisolable steam leak in RB
6	8	I	ATWAS only 1 RPS channel trips (OAC)
7	9	I	MFWI fails, manual isolation (BOP)

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

OPERATING TEST NO.: R/I/U

Applicant Type	Evolution Type	Minimum Number	Scenario Number 1	2	3	4
RO	Reactivity	1	BOP	5	BOP	3
	Normal	1	1	OAC	1	OAC
	Instrument / Component	4	8/9	3/7/8	2/3/8	2/4/6
	Major	1	7	6	9	5
As RO	Reactivity	1	3		5	
	Normal	0	OAC		OAC	
	Instrument / Component	2	4/5/6		4/6/7	
	Major	1	7		9	
SRO-I						
As SRO	Reactivity	0		5		3
	Normal	1		1		1
	Instrument / Component	2		3/7/8/9		2/4/6/7
	Major	1		6		5
SRO-U	Reactivity	0	3	BOP	5	BOP
	Normal	1	1	1	1	1
	Instrument / Component	2	4/5/6 8/9	9-Feb	2/3/6/7	7
	Major	1	7	6	9	5

Instructions:

(1) Enter the operating test number and Form ES-D-1 event numbers for each

(2) Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.4.d) but must be significant per Section

(3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

AUTHOR: Keith E. Hampton

NRC Reviewer: _____

OPERATING TEST NO.: R/I/I

Applicant Type	Evolution Type	Minimum Number	Scenario Number 1	2	3	4
RO	Reactivity	1	BOP	5	BOP	3
	Normal	1	1	OAC	1	OAC
	Instrument / Component	4	8/9	3/7/8	2/3/8	2/4/6
	Major	1	7	6	9	5
As RO	Reactivity	1	3			BOP
	Normal	0	OAC			1
	Instrument / Component	2	4/5/6			7
	Major	1	7			5
SRO-I						
As SRO	Reactivity	0		5	5	
	Normal	1		1	1	
	Instrument / Component	2		3/7/8/9	2/3/6/7	
	Major	1		6	9	
SRO-I	Reactivity	0	3	BOP	5	3
	Normal	1	1	1	OAC	1
	Instrument / Component	2	4/5/6 8/9	2/9	4/6/7	2/4/6/7
	Major	1	7	6	9	5

Instructions:

(1) Enter the operating test number and Form ES-D-1 event numbers for each

(2) Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.4.d) but must be significant per Section

(3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

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OPERATING TEST NO.: R/I/Surrogate

Applicant Type	Evolution Type	Minimum Number	Scenario Number 1	2	3	4
RO	Reactivity	1	BOP	5	BOP	3
	Normal	1	1	OAC	1	OAC
	Instrument / Component	4	8/9	3/7/8	2/3/8	2/4/6
	Major	1	7	6	9	5
As RO	Reactivity	1	3		5	
	Normal	0	OAC		OAC	
	Instrument / Component	2	4/5/6		4/6/7	
	Major	1	7		9	
SRO-I						
As SRO	Reactivity	0		5		3
	Normal	1		1		1
	Instrument / Component	2		3/7/8/9		2/4/6/7
	Major	1		6		5
SRO-RO Surrogate	Reactivity	0	3	BOP	5	BOP
	Normal	1	1	1	1	1
	Instrument / Component	2	4/5/6 8/9	2/9	2/3/6/7	7
	Major	1	7	6	9	5

Instructions:

(1) Enter the operating test number and Form ES-D-1 event numbers for each

(2) Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.4.d) but must be significant per Section

(3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

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Competencies R / I / U & (surrogate)	Applicant #1 RO/SRO-I/SRO-U				Applicant #2 RO/SRO-I/SRO-U				Applicant #3 RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1 o	2 s	3 o	4 s	1 s	2 B	3 s	4 B
Understand and Interpret Annunciators and Alarms	1	3/4/7/8	1/2/3/8	1/5/7	4/5/6	2/3/4/6	3/5/6 7/9	1/3/5 6/7	1/2/4/6	1/2/4/9	ALL	1/3/5/7
Diagnose Events and Conditions	9	3/4/5 6/7/8	2/3/8/9	5/7	4/5/6/10	2/3/4 5/6/7 8/9	3/4/5 6/7/9	2/3/4 5/6/7	2/3/4 5/6/7 8/9/10	2/4/9	ALL	3/5/7
Understand Plant and System Response	1/7	3/4/5 6/7/8	2/3/5 6/8	5/7	3/5/7/10	2/3/4 5/6/7 8/9	3/4/5 6/7/9	2/3/4 5/6/7	ALL	1/2/4/9	ALL	1/3/5/7
Comply With and Use Procedures (1)	1	4/6/8	1/3/8/9	1/7	5/6/7/10	2/4/5 6/7/8	5/6/7/9	1/2/3 5/6/7	1/4/5 6/7/8 9/10	1/2/4/9	ALL	1/3/5/7
Operate Control Boards (2)	1/8/9	3/5/7/8	1/3/8/9	1/7	3/4/6 7/10	N/A	4/5/6 7/9	N/A	N/A	1/2/4/9	N/A	1/3/5/7
Communicate and Interact With the Crew	1/7/8/9	3/4/5 6/7/8	1/2/3 8/9	1/5/7	3/4/5 6/7/10	2/3/4 5/6/7 8/9	3/4/5 6/7/9	1/2/3 4/5/6/7	ALL	1/2/4/9	ALL	1/3/5/7
Demonstrate Supervisory Ability (3)	N/A	N/A	N/A	N/A	N/A	2/3/4 6/7/8/9	N/A	ALL	ALL	N/A	ALL	N/A
Comply With and Use Tech. Specs. (3)	N/A	N/A	N/A	N/A	N/A	2/4	N/A	1/6	2/5	N/A	2/7	N/A

NOTES:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

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Competencies R / I / I	Applicant #1 RO/SRO-I/SRO-U				Applicant #2 RO/SRO-I/SRO-U				Applicant #3 RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1 B	2 O	3 B	4 O	1 O	2 S	3 S	4 B	1 S	2 B	3 O	4 S
Understand and Interpret Annunciators and Alarms	1	3/4/7/8	1/2/3/8	1/5/7	4/5/6	2/3/4/6	ALL	1/3/5/7	1/2/4/6	1/2/4/9	3/5/6 7/9	1/3/5 6/7
Diagnose Events and Conditions	9	3/4/5 6/7/8	2/3/8/9	5/7	4/5/6/10	2/3/4 5/6/7 8/9	ALL	3/5/7	2/3/4 5/6/7 8/9/10	2/4/9	3/4/5 6/7/9	2/3/4 5/6/7
Understand Plant and System Response	1/7	3/4/5 6/7/8	2/3/5 6/8	5/7	3/5/7/10	2/3/4 5/6/7 8/9	ALL	1/3/5/7	ALL	1/2/4/9	3/4/5 6/7/9	2/3/4 5/6/7
Comply With and Use Procedures (1)	1	4/6/8	1/3/8/9	1/7	5/6/7/10	2/4/5 6/7/8	ALL	1/3/5/7	1/4/5 6/7/8 9/10	1/2/4/9	5/6/7/9	1/2/3 5/6/7
Operate Control Boards (2)	1/8/9	3/5/7/8	1/3/8/9	1/7	3/4/6 7/10	N/A	N/A	1/3/5/7	N/A	1/2/4/9	4/5/6 7/9	N/A
Communicate and Interact With the Crew	1/7/8/9	3/4/5 6/7/8	1/2/3 8/9	1/5/7	3/4/5 6/7/10	2/3/4 5/6/7 8/9	ALL	1/3/5/7	ALL	1/2/4/9	3/4/5 6/7/9	1/2/3 4/5/6/7
Demonstrate Supervisory Ability (3)	N/A	N/A	N/A	N/A	N/A	2/3/4 6/7/8/9	ALL	N/A	ALL	N/A	N/A	1/2/3 4/5/6/7
Comply With and Use Tech. Specs. (3)	N/A	N/A	N/A	N/A	N/A	2/4	2/7	N/A	2/5	N/A	N/A	1/6

NOTES:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

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