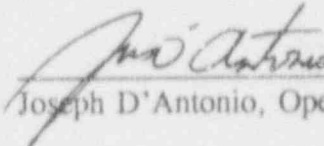


U. S. NUCLEAR REGULATORY COMMISSION REGION 1  
OPERATOR LICENSING EXAMINATION REPORT

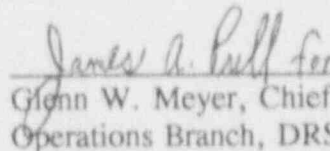
EXAMINATION REPORT NO.: 50-443/92-16(OL)  
FACILITY DOCKET NO.: 50-443  
FACILITY LICENSE NO.: NPF-67  
LICENSEE: North Atlantic Energy Service Corporation  
FACILITY: Seabrook Station Unit 1  
EXAMINATION DATES: August 24 - 28, 1992

CHIEF EXAMINER:

  
Joseph D'Antonio, Operations Engineer

9-22-92  
Date

APPROVED BY:

  
Glenn W. Meyer, Chief, PWR Section  
Operations Branch, DRS

10-1-92  
Date

SUMMARY: Two Senior Reactor Operator (SRO) and six Reactor Operator (RO) initial license examinations were administered. One SRO candidate and five RO candidates passed their examinations and were issued licenses; one SRO and one RO failed the simulator portion of the operating test.

## DETAILS

TYPE OF EXAMINATIONS: Replacement

### 1.0 EXAMINATION RESULTS

	SRO PASS/FAIL	RO PASS/FAIL	TOTAL PASS/FAIL
Written	2/0	6/0	8/0
Simulator	1/1	5/1	6/2
Walk-through	2/0	6/0	8/0
Overall	1/1	5/1	6/2

### 2.0 PERSONS CONTACTED

#### North Atlantic Energy Service Corporation

- \* W. DiProfio            Station Manager
- \* R. Hanley             Operations Training Manager

#### U. S. Nuclear Regulatory Commission

- \*J. D'Antonio          Operations Engineer
- N. Dudley              Senior Resident Inspector
- \*P. Bissett             Senior Operations Engineer
- P. Issac                 Operations Engineer

\* Denotes those present at the exit meeting on 8/28/92.

### 3.0 GENERIC STRENGTHS:

All candidates were excellent at control room communications. Communications were clear, repeatbacks were used, and good efforts were made to ensure that everyone in the control room was aware of all that was said.

### 4.0 WEAKNESSES OBSERVED:

There were no generic deficiencies. One or more individuals exhibited the following weaknesses:

- Inability to state the expected post design basis LOCA flow and discharge pressure values for various ECCS pumps.

- Some candidates were so concerned with their own communications that they interrupted other communications, either deliberately or from failure to listen to what was going on around them before starting to speak.
- Acknowledging and clearing a Video Alarm System alarm without reading it, resulting in no response to a loss of generator hydrogen.
- Inability to correctly interpret indications of an uncontrolled secondary depressurization or to notice failed components in a timely manner.

#### **5.0 EXIT MEETING**

An exit meeting was conducted on August 28, 1992. Management personnel in attendance are noted in paragraph 2.0 of this report. At this meeting, observations during the examination and the simulator fidelity problems detailed in attachment 4 were discussed.

ATTACHMENT 1  
WRITTEN EXAMINATIONS

## ANSWER KEY

## MULTIPLE CHOICE

001 b  
002 b  
003 a  
004 c  
005 c  
006 d  
007 b  
008 a  
009 d  
010 a  
011 a  
012 b  
013 a  
014 a  
015 c  
016 c  
017 a  
018 d  
019 a

## 020 MATCHING

A 3  
B 1  
C 4  
D 2

## MULTIPLE CHOICE

021 b  
022 c  
023 d  
024 c  
025 d  
026 c  
027 d  
028 c  
029 b  
030 b  
031 b  
032 d  
033 b

## ANSWER KEY

## 034 MATCHING

- a 9
- b 3
- c 7
- d 8

## MULTIPLE CHOICE

- 035 a
- 036 c
- 037 b
- 038 b
- 039 b
- 040 c
- 041 c
- 042 b
- 043 b
- 044 c
- 045 a
- 046 c
- 047 c
- 048 c
- 049 a
- 050 c
- 051 d

- 052 b
- 053 c
- 054 d
- 055 b
- 056 a
- 057 c
- 058 d
- 059 c
- 060 b
- 061 b
- 062 a
- 063 a
- 064 d
- 065 c
- 066 a
- 067 b
- 068 d
- 069 c
- 070 b
- 071 d
- 072 b
- 073 b
- 074 c

A N S W E R   K E Y

075    c

M U L T I P L E   C H O I C E

076    b

077    b

078    b

079    a

080    b

081    d

082    c

083    a

084    d

085    d

086    c

087    b

~~088~~    b

089    a

090    M A T C H I N G

A    8

B    3

C    5

D    4

E    7

F    8

G    1

H    2

M U L T I P L E   C H O I C E

091    c

092    c

093    b

094    b

095    d

096    c

A N S W E R   K E Y

MULTIPLE CHOICE

- 001   b
- 002   b
- 003   c
- 004   c
- 005   c
- 006   d
- 007   b
- 008   a
- 009   d
- 010   a
- 011   a
- 012   b
- 013   a
- 014   a
- 015   c
- 016   c
- 017   a
- 018   d
- 019   a

020   MATCHING

- A   3
- B   1
- C   4
- D   2

MULTIPLE CHOICE

- 021   b
- 022   c
- 023   d
- 024   c
- 025   d
- 026   c
- 027   d
- 028   c
- 029   b
- 030   b
- 031   b
- 032   d
- 033   b



A N S W E R   K E Y

034    M A T C H I N G

    a    9

    b    3

    c    7

    d    8

    M U L T I P L E   C H O I C E

035    a

036    c

037    b

038    b

039    b

040    c

041    c

042    b

043    b

044    c

045    a

046    c

047    c

048    c

049    a

050    c

051    d

052    b

053    c

054    d

055    b

056    a

057    c

058    d

059    c

060    b

061    b

062    a

063    a

064    d

065    c

066    a

067    b

068    d

069    c

070    b

071    d

072    b

073    b

074    c

A N S W E R   K E Y

075	c	093	a
076	b	094	c
077	b	095	c
078	b	096	b
079	d	097	b
080	b	098	c
081	b		
082	a		
083	c		
084	b		
085	d		
086	c		
087	b		
088	b		
089	a		
090	d		
091	b		
092	a		

(\*\*\*\*\* END OF EXAMINATION \*\*\*\*\*)

ATTACHMENT 2  
SIMULATOR SCENARIO EVENTS

ES-301-3

SCENARIO EVENTS

Simulation Facility Seabrook

Scenario No. 1

Examiners: DANTONIO  
ISAAC/OGAN  
BESSETT

Candidates \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Initial Conditions: 100%; MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: REDUCE POWER FOR A MFP REPAIR

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	DOWNPOWER
2	137	I	IOOP A TC NR FAIL HIGH
3	166	I	A SG STM FLOW CH 1 FAIL LOW
4	19	C	D RCP #1 SEAL FAILURE
5	24,114, 119,118	MT	DECLG BREAK 50%, LOSS OF OFFSITE POWER, B EDG START FAILURE, A EDG CONTROL ROOM START FAILURE

\*Normal (N), Reactivity manipulation (R), Instrument malfunction (I),  
Component Malfunction (C), Major Transient (MT)

Review Complete: *J. M. Antonio*  
Chief Examiner

ES-301-3

SCENARIO EVENTS

Simulation Facility Seabrook

Scenario No. 2

Examiners: \_\_\_\_\_

Candidates \_\_\_\_\_

DANTONIO

ISAAC/DEAN

Initial Conditions: 75%; MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: INCREASE POWER, RETURNING FROM FEED PUMP MAINTENANCE; PLACE B EDG I/S FOR SURVEILLANCE

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	PLACE B EDG I/S FOR SURV; RAISE POWER
2	GENERIC	C	MINOR STEAM LEAK IN CONT < .05%
3	99	I	N43 FAIL HIGH
4	86	C/I	CVC BPR PCV-131 FAIL X
5	126	C	SEAL OIL FAILURE/HIGH TURBINE VIBS
6	GENERIC	MT	25% A MS BREAK IN CONTAINMENT
7	56	C	EXPLOSION/FIRE IN TG, LOSS SUPP
8	116/119, 158	MT	LOSS OF B VITAL BUS, LOSS OF ALL EFW

\*Normal (N), Reactivity manipulation (R), Instrument malfunction (I), Component Malfunction (C), Major Transient (MT)

Review Complete: \_\_\_\_\_

D. Antonio  
Chief Examiner

ES-301-3

SCENARIO EVENTS

Simulation Facility Seabrook

Scenario No. 3

Examiners: \_\_\_\_\_

Candidates \_\_\_\_\_

BESSERT

ISAAC/DEAN

Initial Conditions: 50%, MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: A MFP I/S, B AT IDLE. PLACE SECOND MFP I/S AND RAISE POWER.

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	PLACE MFP I/S, RAISE POWER
2	22	C	RX FLANGE LEAK 20 GPM
3	139	I	LT-459 PZR LVL FAIL HI
4	122	C	TURB VIBS RAMP UP
5	182/183	I	2 STUCK RODS
6	163	MT/I	D SGTR RAMP IN, ONE D SG LVL CH FAIL LOW
7	GENERIC	I	CHG SUCTION FE RWST ISOLATES WHEN SI RESET

\*Normal (N), Reactivity manipulation (R), Instrument malfunction (I), Component Malfunction (C), Major Transient (MT)

Review Complete: *J. O'Antonio*  
Chief Examiner

ES-301-3

SCENARIO EVENTS

Simulation Facility Seabrook

Scenario No. 4

Examiners: DANTONIO  
ISSAC/DEAN  
BLESSETT

Candidates \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Initial Conditions: 75%; MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: INCREASE POWER

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	INCREASE POWER
2	15	I	PZR CONTROLLING PRESSURE CH FAIL HI
3	62	C	A MFP SEAL WATER FAILURE
4	42	C	LOSS OF A MFP
5	10	I/C	ROD CONTROL AUTO/MAN FAILURE
6	13/155	I/C	ATWT, LOSS OF PP1B
7	GENERIC	MT	3 STEAM DUMP VALVES FAIL AS IS, A&B MSIVs FAIL AS IS

\*Normal (N), Reactivity manipulation (R), Instrument malfunction (I),  
Component Malfunction (C), Major Transient (MT)

Review Complete: *J. D. Antonio*  
Chief Examiner

ES-301-3

SCENARIO EVENTS

Simulation Facility Seabrook

Scenario No. 1

Examiners: BESSETT  
DANTONIO  
ISAAC/DEAN

Candidates \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Initial Conditions: 100%; MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: REDUCE POWER FOR A MFP REPAIR

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	DOWNPOWER
2	137	I	LOOP A TC NR FAIL HIGH
3	166	I	A SG STM FLOW CH 1 FAIL LOW
4	19	C	D RCP #1 SEAL FAILURE
5	24,114, 119,118	MT	DECLG BREAK 50%, LOSS OF OFFSITE POWER, B EDG START FAILURE, A EDG CONTROL ROOM START FAILURE

\*Normal (N), reactivity manipulation (R), Instrument malfunction (I),  
Component Malfunction (C), Major Transient (MT)

Review Complete: *Antonio*  
Chief Examiner



ES-301-3

SCENARIO EVENTS

Simulation Facility Seabrook

Scenario No. 2

Examiners: \_\_\_\_\_  
BESSETT  
\_\_\_\_\_  
DANDONCO  
\_\_\_\_\_

Candidates \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Initial Conditions: 75% MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: INCREASE POWER, RETURNING FROM FEED PUMP MAINTENANCE; PLACE B EDG I/S FOR SURVEILLANCE

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	PLACE B EDG I/S FOR SURV; RAISE POWER
2	GENERIC	C	MINOR STEAM LEAK IN CONT < .05%
3	99	I	N43 FAIL HIGH
4	86	C/I	CVC BPR PCV-131 FAIL X
5	126	C	SEAL OIL FAILURE/HIGH TURBINE VIBS
6	GENERIC	MT	25% A MS BREAK IN CONTAINMENT
7	56	C	EXPLOSION/FIRE IN TG, LOSS SUPP
8	116/119, 158	MT	LOSS OF B VITAL BUS, LOSS OF ALL EFW

\*Normal (N), Reactivity manipulation (R), Instrument malfunction (I), Component Malfunction (C), Major Transient (MT)

Review Complete: *J. Antonio*  
Chief Examiner

ES-301-3

SCENARIO EVENTS

Simulation Facility Seabrook

Scenario No. 3

Examiners: \_\_\_\_\_

Candidates \_\_\_\_\_

ISAAC DEAN

BESSIE DANFORTH

Initial Conditions: 50%, MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: A MFP I/S, B AT IDLE. PLACE SECOND MFP I/S AND RAISE POWER.

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	PLACE MFP I/S. RAISE POWER
2	22	C	RX FLANGE LEAK 20 GPM
3	139	I	LT-459 PZR LVL FAIL HI
4	122	C	TURB VIBS RAMP UP
5	182/183	I	2 STUCK RODS
6	163	MT/I	D SGTR RAMP IN, ONE D SG LVL CH FAIL LOW
7	GENERIC	I	CHG SUCTION FE RWST ISOLATES WHEN SI RESET

\*Normal (N), Reactivity manipulation (R), Instrument malfunction (I), Component Malfunction (C), Major Transient (MT)

Review Complete: *J. O. Antonio*  
Chief Examiner

ES-301-3

SCENARIO EVFNTS

Simulation Facility Seabrook

Scenario No. 4

Examiners: BESSETT  
DANTONIO  
ISAAC/DEAN

Candidates \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Initial Conditions: 75% MDAFW Pp C/T; A RHR Pp C/T; P60A C/T

Turnover: INCREASE POWER

<u>EVENT NO.</u>	<u>MALF. NO.</u>	<u>TYPE*</u>	<u>DESCRIPTION</u>
1		N/R	INCREASE POWER
2	15	I	PZR CONTROLLING PRESSURE CH FAIL HI
3	62	C	A MFP SEAL WATER FAILURE
4	42	C	LOSS OF A MFP
5	10	I/C	ROD CONTROL AUTO/MAN FAILURE
6	13/155	I/C	ATWT, LOSS OF PP1B
7	GENERIC	MT	3 STEAM DUMP VALVES FAIL AS IS, A&B MSIVs FAIL AS IS

\*Normal (N), Reactivity manipulation (R), Instrument malfunction (I),  
Component Malfunction (C), Major Transient (MT)

Review Complete: *J. Antonio*  
Chief Examiner

ATTACHMENT 3  
FACILITY COMMENTS AND RESOLUTION

The facility had no post-examination comments. During the administration of the written examination, the NRC proctor determined that one multiple choice question on the RO examination had no correct answer; this question was deleted.

ATTACHMENT 4  
SIMULATION FACILITY REPORT

FACILITY LICENSEE: North Atlantic Energy Service Corporation

FACILITY DOCKET NO.: 50-443

Operating Tests administered from 8/24 - 28, 1992

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of noncompliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the validation of the simulator examination scenarios and Job Performance Measures, the following items were observed.

- During scenario validation, the simulator would not correctly model a steam break. The behavior of the plant was such that the primary and secondary appeared to become uncoupled. In another scenario, the simulator froze shortly after a loss of a power panel was inserted.
- During JPM validation, the simulator froze when attempting to establish natural circulation in preparation for the actual task.
- During the actual administration of the examinations, these problems did not occur. The facility attributed the problems to programming or loading errors which were corrected between the validation week and the examination week.