

February 3, 2005

Mr. James A. Spina  
Vice President Nine Mile Point  
Nine Mile Point Nuclear Station, LLC  
P.O. Box 63  
Lycoming, NY 13093

SUBJECT: NINE MILE POINT UNIT 1 - REACTOR OPERATOR AND SENIOR REACTOR  
OPERATOR INITIAL EXAMINATION REPORT 05000220/2005301

Dear Mr. Spina:

This report transmits the results of the Reactor Operator (RO) and Senior Reactor Operator (SRO) licensing examination conducted by the NRC during the period of November 1-18, 2004. This examination addressed areas important to public health and safety and was developed and administered using the guidelines of the "Examination Standards for Power Reactors" (NUREG-1021, Revision 9).

Based on the results of the examination, four (out of five) Senior Reactor Operator and three (out of four) of the Reactor Operator applicants passed all portions of the examination. The nine applicants included four ROs and five instant SROs. The results indicated that the applicants were generally well prepared for the examination. Mr. John G. Caruso discussed initial performance insights observed during the examination with Messrs. Mike Jaquin and Dave Wandschneider of your staff on November 5, 2004. On January 14, 2005, final examination results, including individual license numbers, were given during a telephone call between Mr. John G. Caruso and Mr. Mike Jaquin of your staff.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). These records include the final examination and are available in ADAMS (Master File - Accession Number ML041450453 RO and SRO Written - Accession Number ML050260704; RO and SRO Operating Section A - Accession Number ML050260692; RO and SRO Operating Section B - Accession Number ML050260694; and RO and SRO Operating Section C - Accession Number ML050260701), ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Mr. James A. Spina

2

Should you have any questions regarding this examination, please contact me at (610) 337-5183 or by E-mail at [RJC@NRC.GOV](mailto:RJC@NRC.GOV) .

Sincerely,

*/RA/*

Richard J. Conte, Chief  
Operational Safety Branch  
Division of Reactor Safety

Docket No. 50-220  
License No. DPR-63

Enclosure: Initial Examination Report No. 05000220/2005301

cc w/encl:

M. J. Wallace, President, Constellation Generation  
M. Heffley, Senior Vice President and Chief Nuclear Officer  
J. M. Petro, Jr., Esquire, Counsel, Constellation Energy Group, Inc.  
M. J. Wetterhahn, Esquire, Winston and Strawn  
P. R. Smith, President, New York State Energy, Research, and Development Authority  
J. Spath, Program Director, New York State Energy Research and Development Authority  
P. D. Eddy, Electric Division, NYS Department of Public Service  
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law  
Supervisor, Town of Scriba  
T. Judson, Central NY Citizens Awareness Network  
D. Katz, Citizens Awareness Network  
T. Evans, Manager - Nuclear Training  
S. Glenn, Institute of Nuclear Power Operations  
General Supervisor Outage Management, Niagara Mohawk Power Corporation

Mr. James A. Spina

3

Distribution w/encl: (via e-mail)

- S. Collins, RA
- J. Wiggins, DRA
- J. Trapp, DRP
- N. Perry, DRP
- S. Lee, RI EDO Coordinator
- R. Laufer, NRR
- P. Tam, PM, NRR
- G. Hunegs, SRI - Nine Mile Point
- B. Fuller, RI - Nine Mile Point
- E. Knutson, RI - Nine Mile Point
- K. Kolek, OA
- W. Lanning, DRS
- J. Caruso, DRS, Chief Examiner
- C. Bixler, DRS (OL Facility File)
- DRS Master Exam File
- Region I Docket Room (with concurrences)

**SISP Review Complete: RJC**

DOCUMENT NAME: E:\Filenet\ML050340374.wpd

**ADAMS PACKAGE: ML0041450453**

After declaring this document "An Official Agency Record" it **will** be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/DRS/OSB	RI/DRS/OSB	RI/DRP	RI/DRS/OSB
NAME	CBixler/ <b>CJB</b>	JCaruso/ <b>JGC</b>	JTrapp/ <b>NSP for</b>	RJConte/ <b>RJC</b>
DATE	02/02/05	02/03/05	02/02/05	02/03/05

OFFICIAL RECORD COPY

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-220

License No. DPR-63

Report No. 05000220/2005301

Licensee: Constellation Energy Group, Inc.

Facility: Nine Mile Point Unit 1

Location: P. O. Box 63  
Lycoming, NY 13093

Dates: November 18, 2004 (Written Examination Administration)  
November 1-5, 2004 (Operating Test Administration)  
December 10, 2004 (Licensee Initial Grading and Comment on Written Examination)  
December 28, 2004 (Revised Licensee Comment)  
November 5, 2004-January 13, 2005 (NRC Examination Grading & Evaluation of Comments)

Examiners: John G. Caruso, Senior Operations Engineer (Chief Examiner)  
Herb Williams, Senior Operations Engineer  
Gil Johnson, Operations Engineer

Approved by: Richard J. Conte, Chief  
Operational Safety Branch  
Division of Reactor Safety

Enclosure

## SUMMARY OF FINDINGS

IR 05000220/2005301; November 1-18, 2004; Nine Mile Point Unit 1; Initial Operator Licensing Examination. Seven of nine applicants passed the examination (three reactor operators, four SRO instants).

The written examinations were administered by the facility and the operating tests were administered by three NRC region-based examiners. There were no inspection findings of significance associated with the examinations.

A. NRC-Identified and Self-Revealing Findings

None

B. Licensee-Identified Violations

None

## REPORT DETAILS

### 1. REACTOR SAFETY

#### Mitigating Systems - Reactor Operator (RO) and Senior Reactor Operator (SRO) Initial License Examination

##### a. Scope of Review

The licensee developed the written examination and the operating initial examination. The NRC together with Site training and operations personnel verified or ensured, as applicable, the following:

- The examination was prepared and developed in accordance with the guidelines of Revision 9 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." A review was conducted both in the Region I office and at the plant and training facility. Final resolution of comments and incorporation of test revisions were conducted during and following the onsite preparation week.
- Simulation facility operation was proper.
- A test item analysis was completed on the written examination for feedback into the systems approach to training program.
- Examination security requirements were met.

The NRC examiners administered the operating portion of the examination to all applicants from November 1-5, 2004. The written examination was administered by the site training staff on November 18, 2004.

##### b. Findings

###### Grading and Results

Seven applicants (four SROs and three ROs) passed all portions of the initial licensing examination.

The facility had one post-examination comment on the SRO portion of the written examination. NRC resolution of this comment is attached. Based on this comment resolution, the NRC re-graded all SRO applicant written examinations. The re-grading of the SRO written examination resulted in one SRO applicant achieving a passing grade, rather than a failing grade as originally determined by the licensee.

###### Examination Administration and Performance

During the exam administration there were no potential simulator fidelity issues or training deficiencies identified.

Enclosure

4OA6 Exit Meeting Summary

On January 14, 2005, the NRC provided conclusions and examination results to site management representatives via telephone. License numbers for six of seven applicants were also provided during this time. The license number for the one remaining applicant was withheld pending any potential appeals on the written examination.

The NRC expressed appreciation for the cooperation and assistance that was provided during the preparation and administration of the examination by the licensee's training staff.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

M. Jaquin, Manager, Nuclear Training  
D. Wandschneider, Supervisor, Operator Training

NRC Personnel

J. Caruso, Senior Operations Engineer  
H. Williams, Senior Operations Engineer  
G. Johnson, Operations Engineer

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened/Closed/Discussed

None

**Resolution to NMP-1 Question SRO #25**

Original Question:

Emergency events are in progress:

- (08:00) General emergency declared.
- (08:12) Notification sent with wind direction from 304°.
- (08:42) EOF is manned including county and state representatives.
- (08:52) Radiological Assessment Manager reports radiation levels up to 1 REM TEDE are projected outward to 10.2 miles from the site.
- (08:52) Wind direction HAS SHIFTED and is now from 278.

Which one of the following is the correct information to be communicated to the EOF regarding protective action recommendations?>>

- A. <QQ 21206(1480)><<continue the previously recommended evacuations in SCRIBA and NEW HAVEN Townships. Additional Evacuations are not required.>>
- B. <QQ 21206(1480)><<Continue the previously recommended evacuations in SCRIBA and NEW HAVEN Townships. Additional evacuations are being recommended for MEXICO and RICHLAND townships.>>
- C. <QQ 21206(1480)><<Some evacuations in SCRIBA Township will be discontinued. Continue the previously recommended evacuations in NEW HAVEN Township. Additional Evacuations are not required.>>
- D. <QQ 21206(1480)><<Some evacuations in SCRIBA Township will be discontinued. Continue the previously recommended evacuations in NEW HAVEN Township. Additional evacuations are being recommended for MEXICO and RICHLAND townships.>>

Original Answer: <QQ 21206(1419)><<B>>

**LICENSEE'S JUSTIFICATION FOR CHANGE**

The flaw stems from the ambiguity in the 4th bullet that states:

“(08:52) Radiological Assessment Manager reports radiation levels up to 1 REM TEDE are projected outward to 10.2 miles from the site.” More specifically – “...up to 1 REM TEDE projected outward to 10.2 miles...”

The author of the question assumed that the applicants look at the calculation as a linear function and assumed that the applicants would determine that 1 REM TEDE would be

exceeded. A faulty mental model during question development and review failed to take into account any meteorological conditions.

In accordance with EPIP-EPP-08 the criteria used to determine PAR for each ERPA is Evacuate when TEDE is >1 (greater than). This can be found in several sections including: Step 3.1.1. j. 3., Attachment 1 Flow chart (not provided during exam) and Table 1.3, Attachment 5 step 2.3.4.

**3.1 Dose Assessment and Protective Action from the Control Room**

\*\*\*\*\*

**CAUTION**

Calculation involving the determination of release rates and/or protection action shall be self-checked for accuracy.

\*\*\*\*\*

**3.1.1 Chemistry Technician Actions**

- j. If an unmonitored atmospheric release is suspected or known to be in progress, then assist the SSS/ED in the following actions:
  - 1. Advise the SSS/ED to expedite the dispatch of Radiation Protection (RP) Technician. Request assistance of the unaffected Unit or J.A. Fitzpatrick if needed.
  - 2. The RP Technician should be dispatched to potential plume centerline {wind direction (degrees) 180 = plume centerline}, as close to the site boundary as practical. See Attachment 1, Figure 1.4 for Site boundary location.
  - 3. If readings indicate > 1 Rem/hr based on field survey perform the actions indicated in Attachment 1.

<b>TABLE 1.3 - EPA 400 Protective Action Guidelines (EPA PAGs)</b>		
<b>PAR)</b>	<b>TEDE (rem</b>	<b>) CDET (rem</b>
Evacuate	> 1	> 5

**ATTACHMENT 5**

2.3.4 PARs that have been made previously must be accounted for when PARs are revised. For example, if a PAR to evacuate an ERPA was previously made to the State/County and that PAR does not appear on a revised map from 1.2.9.j, that PAR must still be included on the revised recommendation to the State/County. Once a PAR is transmitted to the State/County, it shall not be changed.

To select between answer A and B, evaluation of the following data is required:

“radiation levels are **up to 1 REM**” ... “**outward to 10.2 miles.**”

There are multiple assumptions that can be made based on the given conditions. Since evacuation of any ERPA or areas beyond 10 miles is based on the dose projection for that specific area and no areas are stated as being greater than 1 REM then it cannot assume there is an area or multiple areas above 1 REM closer to the plant OR farther from the plant. Dose closer to the plant or beyond 10 miles could be in excess or less than 1 REM based on specific environmental conditions not given in this question such as rain in Mexico beyond a 12-mile radius could be the cause of the readings up to 1 REM at 10.2 miles. Dose ‘outward to’ 10.2 miles implies that surveys have been done starting at the plant and traveling away from the plant. Downwind survey teams would be initially dispatched from the plant and with the given wind direction the downwind ERPAs (14 & 15) extends outward in excess of eleven (11) miles (see EPIP-EPP-07 Att 3 and attached EPZ figure). 1 REM would be a very significant dose at 10.2 miles and if treated as a point source toward the plant you could have deadly dose rates inside the plant. Dose projections are not treated solely as a point source – meteorological conditions and downwind surveys or EDAMS projections are used to project dose. The fact is that dose rates are **NOT** exceeding 1 REM as reported by the RAM and given in the question stem (without any assumptions added). Therefore, no additional PARs are recommended by the flow chart in Attachment 1 or per Attachment 5 for any ERPA or areas beyond 10 miles.

The attached printout from the EDAMS computer provides indication that dose rates at a greater distance from the source can be greater than the source when taking into account meteorological conditions.

On the basis of the above information, the facility recommends that question 25 of the SRO exam has two correct answers:

- A. <QQ 21206(1480)><<Continue the previously recommended evacuations in SCRIBA and NEW HAVEN Townships. Additional Evacuations are not required.>>
- B. <QQ 21206(1480)><<Continue the previously recommended evacuations in SCRIBA and NEW HAVEN Townships. Additional evacuations are being recommended for MEXICO and RICHLAND townships.>>

#### **LICENSEE’S SECOND JUSTIFICATION FOR CHANGE**

This supercedes the NRC INITIAL WRITTEN EXAMINATION POST-EXAMINATION ANALYSIS submitted on 10 December 2004.

## SUMMARY

Per NUREG-1021, Rev. 9, Sections ES-402 and ES-501, the facility submits the following NRC INITIAL WRITTEN EXAMINATION POST-EXAMINATION ANALYSIS for your review and consideration.

The facility proposes that question 25 of the SRO examination has Distractor “a” as the correct answer. This change will affect the grades of the SRO applicants.

### Problem Statement:

Keyed Answer (b) is incorrect. Distractor “a” is the correct answer

The following statements used to justify “b” as the correct answer is incorrect:

“If dose at 10 miles is projected to meet or exceed 1 rem TEDE or 5 rem CDE (Thyroid), then make protective action recommendations and recommend evacuation to that distance in the affected areas.”

*The criterion identified in EPIP-EPP-08 R15 clearly defines the threshold value to be **greater than** 1 rem TEDE or **greater than** 5 rem CDE. The question stem clearly indicated values less than or equal to 1 rem TEDE. This fact alone means that EPIP-EPP-08 does not require any ERPAs or areas at 10.2 miles distance from the plant to be evacuated. A follow-up interview with a member of the Emergency Planning Organization (John Kaminski), supports the requirements to use field survey data for EPRA recommendations and not assumed or extrapolated dose information.*

“Therefore, continue the previously recommended evacuations in SCRIBA and NEW HAVEN Townships for ERPA 1, 2, 3, 4, 5, 7, 9, 10 although the new ERPAs based on the windshift are 1, 2, 3, 4, 7 and NOT 5 and 9.”

*The previous PARS implied in the question stem are to evacuate ERPAs 1, 2, 3, 4, 5, 7, 9, 10, 26, & 27 for a wind direction of 304°. With the wind shifting to 278°, the affected ERPAs are 1, 2, 3, 4, 7, 9, 26, & 27. ERPAs 5 and **10** are not affected but will still be included per EPIP-EPP-8.*

*EPP-EP-P-08 Rev. 15, Attachment 5, Refined Dose Assessment and Protective Actions, Steps 2.3 provides guidance for PARS clearly indicates that values greater than 1 TEDE or greater than 5 CDE are the criteria for the PAR for each EPRA.*

Justification for “a” being the correct answer:

*IAW EPIP-EPP-08, Attachment 1, PARs are re-evaluated to account for the shift in wind direction. At 278°, all of the previously evacuated ERPAs are still affected except 5 and 10 which are still evacuated IAW EPIP-EPP-08 Attachment 5, Section 2.3.4. No further recommendations are needed since the criterion of Table 1.3 in Attachment 1 is not met.*

Justification for “c” and “d” being incorrect:

*EPIP-EPP-08, Attachment 5, Section 2.3.4 does not allow us to discontinue an evacuation already recommended.*

Supporting documentation attached:

EPIP-EPP-08 Revision 15  
Section 3.1.1.j  
Attachment 1, Tables 1.2 and 1.3  
Attachment 5, Section 2.3

**FINAL LICENSEE RECOMMENDATION:**

On the basis of the above information the facility recommends that question 25 of the SRO exam has Distractor “a” as the correct answer:

- A. Continue the previously recommended evacuations in SCRIBA and NEW HAVEN Townships. Additional Evacuations are not required.

**NRC RESOLUTION:**

Background information: The originator of the question (and specified correct answer) assumed that the information in the stem “...radiation levels up to 1 REM TEDE are projected outward to 10.2 miles from the site” would be extrapolated (by the applicants) to conclude that there was > 1 REM at 10 miles. That is, the applicants would assume a point source and calculate that a reading approaching 1 REM at 10.2 miles would result in equal to or greater than 1 REM at 10.0 miles. Procedure EPIP-EPP-08, “Off-site Dose Assessment and Protective Action Recommendations (provided to the applicants during the exam) only address readings > 1 REM/hr based on field survey. There are no instructions in the procedure to take field data at 10.2 miles and extrapolate to the 10.0 mile range. Likewise, Table 1.3 (addressing EPA PAGs) specifies evacuation for TEDE >1 REM. No where in the stem does it specify that there is a TEDE > 1REM.

NUREG 1021, Appendix E Item #7 specifies that the applicants “do not make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question.” As specified in the licensee’s original response: “Dose projections are not treated solely as a point source- meteorological conditions and downwind surveys or EDAMS projections are used to project dose. The attached printout from the EDAMS computer provides indication that dose rates at a greater distance from the source can be greater than the source when taking into account meteorological conditions.” Since there is no data in the stem to support (an assumption) that there is a TEDE > 1 REM then additional evacuations are not required. These facts would provide viable arguments that

“B” is not a correct answer (since it requires assumption of a point source and extrapolation of this point source to >1 REM/hr at 10.0 miles).

Step 2.3.4 of EPIP-EPP-08 specifies that “once a PAR is transmitted to the State/County, it shall not be changed.” Even though the wind shift specified in the stem of the question changed conditions in areas 5 and 10, the evacuations should proceed as originally directed. This eliminates “C” and “D” distractors as correct answers.

Considering this information, as well as interviews with their own EP personnel, the licensee rescinded their original request to accept two correct answers (“A” and “B”) and concluded there is only one correct answer; “A” (rather than the original proposed answer “B”).

Three examiners reviewed both the original and resubmitted licensee responses and have concluded the second recommended resolution (to accept only “A” as the correct answer) is correct and should be accepted.

**Final Resolution:**

**Change the correct answer for SRO Question #25 from B to A.**