May 18, 2009

Mr. David A. Christian
Senior Vice President and Chief Nuclear Officer
Dominion Resources
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNIT 2 – NRC EXAMINATION REPORT NO. 05000336/2009301

Dear Mr. Christian:

On February 24, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at Millstone Unit 2. The enclosed report documents the examination findings, which were discussed on April 17, 2009, with Mr. Michael Cote.

The examination included the evaluation of two applicants for reactor operator licenses, two applicants for instant senior operator licenses and six applicants for upgrade senior operator licenses. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. The license examiners determined that four of the ten applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued. Four of the six applicants for upgrade senior operator licenses passed their exams but their licenses are being held until you certify in writing that they have acquired all of the training and experience for which they were previously granted a waiver. The remaining two applicants for upgrade senior operator licenses failed the written portion of their exams and were denied a license.

No findings of significance were identified during this examination. However, the NRC determined that the written portion of the initial examination submittal was outside the acceptable quality range expected by the NRC and future examination submittals should incorporate any lessons learned from this effort.

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). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Samuel L. Hansell, Jr., Chief
Operations Branch
Division of Reactor Safety

Mr. David A. Christian
Senior Vice President and Chief Nuclear Officer
Dominion Resources
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNIT 2 – NRC EXAMINATION REPORT NO. 05000336/2009301

Dear Mr. Christian:

On February 24, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an examination at Millstone Unit 2. The enclosed report documents the examination findings, which were discussed on April 17, 2009, with Mr. Michael Cote.

The examination included the evaluation of two applicants for reactor operator licenses, two applicants for instant senior operator licenses and six applicants for upgrade senior operator licenses. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. The license examiners determined that four of the ten applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued. Four of the six applicants for upgrade senior operator licenses passed their exams but their licenses are being held until you certify in writing that they have acquired all of the training and experience for which they were previously granted a waiver. The remaining two applicants for upgrade senior operator licenses failed the written portion of their exams and were denied a license.

No findings of significance were identified during this examination. However, the NRC determined that the written portion of the initial examination submittal was outside the acceptable quality range expected by the NRC and future examination submittals should incorporate any lessons learned from this effort.

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). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/
Samuel L. Hansell, Jr., Chief
Operations Branch
Division of Reactor Safety

SUNSI Review Complete: JGC (Reviewer's Initials)
ADAMS PKG: ML082600232 **ADAMS ACC#ML091390160**
DOCUMENT NAME: T:\DRS\Operations Branch\CARUSO\Exam 09-MS2 Feb 09 (U01634)\EXAM REPORT.doc
After declaring this document "An Official Agency Record" it **will** be released to the Public.

OFFICE	RI/DRS	RI/DRS	RI/DRS		
NAME	CBixler/DS/CB	JCaruso/JC	SHansell/SLH		
DATE	05/15/09	05/15/09	05/18/09		

OFFICIAL RECORD COPY

Enclosure;
NRC Examination Report 05000336/2009301

cc w/encl:
J. Price, Vice President, Engineering, Dominion Fleet
A. Jordan, Site Vice President, Millstone Station
C. Funderburk, Director, Nuclear Licensing and Operations Support
L. Morris, Plant Manager, Millstone Station
W. Bartron, Supervisor, Station Licensing
J. Spence, Manager Nuclear Training
L. Cuoco, Senior Counsel
C. Brinkman, Manager, Washington Nuclear Operations
J. Roy, Director of Operations, Massachusetts Municipal Wholesale Electric Company
First Selectmen, Town of Waterford
B. Sheehan, Chair, NEAC
P. Rathbun, Vice-Chair, NEAC
E. Wilds, Jr., Ph.D, Director, State of Connecticut SLO Designee
J. Buckingham, Department of Public Utility Control
C. Meek-Gallagher, Commissioner, Suffolk County, Department of Environment and Energy
V. Minei, P.E., Director, Suffolk County Health Department, Division of Environmental Quality
R. Shadis, New England Coalition Staff
S. Comley, We The People
D. Katz, Citizens Awareness Network (CAN)
R. Bassilakis, Citizens Awareness Network (CAN)
P. Eddy, Electric Division, Department of Public Service, State of New York
F. Murray, President and CEO, New York State Energy Research and Development Authority
A. Peterson, SLO Designee, New York State Energy Research and Development Authority
N. Burton, Esq.

Distribution w/encl: via email
S. Collins, RA
M. Dapas, DRA
D. Roberts, DRS
P. Wilson, DRS
K. Gruss, DRS
S. Hansell, DRS
J. Caruso, DRS
D. Lew, DRP
J. Clifford, DRP
R. Bellamy, DRP
S. Barber, DRP
C. Newport, DRP
S. Shaffer, SRI
B. Haagensen, RI
J. Krafty, RI
C. Kowalyshyn, OA
S. Campbell, RI OEDO
M. Kowal, NRR
R. Nelson, NRR
C. Sanders, NRR, PM
ROPreports@nrc.gov
Region I Docket Room (with concurrence)

Distribution w/encl:
DRS Master Exam File (C. Bixler) (w/concurrences)
DRS File

EXAMINATION REPORT
U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket:	50-336
Licenses:	DPR-65
Report :	05000336/2009301
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 2
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	January 26-30, 2009 (Operating Test Administration) February 24, 2009 (Written Examination Administration) March 23, 2009 (Licensee Submitted Post Exam Package) March 31, 2009 (Licensee Submitted Revised Post Exam Package) April 15, 2009 (Licensee Withdrew One Post Exam Comment) February 2 - April 16, 2009 (NRC Examination Grading)
Inspectors:	John Caruso, Chief Examiner, Operations Branch Brian Haagensen, Operations Engineer Peter Presby, Operations Engineer
Approved By:	Samuel L. Hansell, Jr., Chief Operations Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

ER 05000336/2009301; January 26 - February 24, 2009; Millstone Power Station, Unit 2; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of two applicants for reactor operator licenses, two applicants for instant senior operator licenses and six applicants for upgrade senior operator licenses at Millstone Power Station, Units 2. The facility licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. NRC examiners administered the operating tests on January 26-30, 2009. The written examination was administered by the facility on February 24, 2009. The license examiners determined that four of the ten applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued. Four of the six applicants for upgrade senior operator licenses passed their exams but their licenses are being held until the licensee certifies in writing that they have acquired all of the training and experience for which they were previously granted a waiver. The remaining two applicants for upgrade senior operator licenses failed the written portion of their exams and were denied a license.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other Activities (Initial Operator License Examination)

.1 License Applications

a. Scope

The examiners reviewed all ten license applications submitted by the licensee to ensure the applications reflected that each applicant satisfied relevant license eligibility requirements. The applications were submitted on NRC Form 398, "Personal Qualification Statement," and NRC Form 396, "Certification of Medical Examination by Facility Licensee." The examiners also audited three of the license applications in detail to confirm that they accurately reflected the applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

b. Findings

No findings of significance were identified.

.2 Operator Knowledge and Performance

a. Examination Scope

On February 24, 2009, the licensee proctored the administration of the written examinations to all ten applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on March 23, 2009.

The NRC examination team administered the various portions of the operating examination to all ten applicants on January 26-30, 2009. The two applicants for reactor operator licenses participated in three dynamic simulator scenarios, in a control room and facilities walkthrough test consisting of eleven system tasks, and an administrative test consisting of four administrative tasks. The two applicants seeking an instant senior operator license participated in three dynamic simulator scenarios, a control room and facilities walkthrough test consisting of ten system tasks, and an administrative test consisting of five administrative tasks. The six applicants for upgrade senior operator licenses participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of five system tasks, and an administrative test consisting of five administrative tasks.

b. Findings

All ten of the applicants passed all parts of the operating test. Two upgrade senior operator applicants failed the written examination. For the written examinations, the reactor operator (RO) applicants' average score was 83.9 percent and ranged from 81.3 to 86.6 percent, the senior operator applicants' average score was 85.7 percent and ranged from 79.1 to 91.6 percent. The overall written examination average was 85.3 percent. The text of the examination questions, the licensee's examination analysis,

and the licensee's post-examination comments may be accessed in the ADAMS system under the accession numbers noted in the attachment.

Chapter ES-403 and Form ES-403-1 of NUREG 1021 require the licensee to analyze the validity of any written examination questions that were missed by half or more of the applicants. The licensee graded the examination on February 24, 2009, and subsequently conducted this performance analysis for twelve questions that met these criteria and submitted the analysis to the chief examiner. This analysis concluded that nine of the questions were technically valid as administered. The licensee submitted three post-examination question comments on March 23, 2009. On April 15, 2009, the licensee submitted a letter retracting one of the three comments. The results of the NRC's review of the station's comments are documented in Attachment 3, "Post Examination Comments and Resolutions."

.3 Initial Licensing Examination Development

a. Examination Scope

The facility licensee developed the examinations in accordance with NUREG-1021, Revision 9, Supplement 1. All licensee facility training and operations staff involved in examination preparation and validation were on a security agreement. The facility licensee submitted both the written and operating examination outlines on October 30, 2008. The chief examiner reviewed the outlines against the requirements of NUREG-1021, Revision 9, Supplement 1, and provided comments to the licensee. The facility licensee submitted the draft examination package between November 14-25, 2009. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, Revision 9, Supplement 1, and provided comments to the licensee on the examination on December 8, 2008. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of December 15, 2009. The license satisfactorily completed comment resolution for the operating examination on January 20, 2009 and for the written examination on February 23, 2009.

b. Findings

The NRC approved the initial examination outline and advised the licensee to proceed with the operating examination development.

The examiners determined that the operating examination initially submitted by the licensee was within the range of acceptability expected for a proposed examination. However, more than 20 percent of both the RO and SRO examinations were assessed separately and required replacement or significant modification. The affected questions (i.e., RO questions 1, 8, 10, 14, 22, 25, 28, 32, 36, 39, 42, 44, 45, 67, 71, 74 and SRO questions 76, 77, 81, 82, 83, 86, 88, 95, 96, 99 and 100) contained various psychometric flaws including: more than one implausible distractor, knowledge and ability statement mismatches, low level of difficulty, direct look-up and some of the SRO questions were not written at the SRO level.

.4 Simulation Facility Performance

a. Examination Scope

The examiners observed simulator performance with regard to plant fidelity during the examination validation and administration.

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Examination Scope

The examiners reviewed examination security for examination development, the onsite preparation week, and examination administration week for compliance with NUREG-1021 requirements. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

There was one issue associated with examination security identified by the licensee following the administration of the operating examination. On February 1, 2009, a Millstone Unit 2 Shift Manager (SM) found a stack of six plant photos and a single copy of the Job Performance Measures (JPMs) outline for the Control Room/In-plant JPMs. The material was left out on a cart in the turbine building near the auxiliary feedwater system. The SM identified the outline as potential initial NRC exam information and notified the training department. Representatives of the training department called the Chief Examiner, on February 3, 2009, and notified him of this issue. The NRC examiners administering the in-plant JPMs inadvertently left the photos and outline adrift in the plant. The photos were not used during the exam and were provided just in case the SM did not provide permission to open electrical panels during exam administration.

The six upgrade senior operator applicants had completed the walkthrough portion of their exams on January 26, 2009. The six upgrade senior operator applicants were in the presence of one of the three examiners or appropriately sequestered that entire day so there was no chance of exam compromise for those six applicants. The two instant senior operator applicants had four remaining simulator JPMs each and the two ROs had five remaining simulator JPMs each that were administered between January 27-29, 2009. These four applicants were also in the presence of one of the three examiners or appropriately sequestered that entire period. In addition, a review of plant access records confirmed that these individuals did not re-enter the protected area at any time during the period January 27-29, 2009 (i.e, after their in-plant JPMs were administered on January 26, 2009).

Two Millstone Training Supervisors interviewed all four applicants and verified that they had no prior knowledge regarding the JPM outline or any portion of the exam. The exam team concluded there was no evidence that an actual exam compromise occurred based on the above stated facts and based on the performance of the applicants some of whom exhibited weaknesses during exam administration. In addition, the NRC will

conduct a self assessment in this area and assign appropriate corrective actions to prevent recurrence.

4OA6 Meetings, Including Exit

The chief examiner presented the examination results to Mr. Michael Cote, Unit 2 Requalification Program Supervisor on April 18, 2009. The licensee acknowledged the findings presented.

The licensee did not identify any information or materials used during the examination as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Spence, Nuclear Training Manager
M. Cote, Unit 2 Requalification Program Supervisor
T. Horner, Initial Operator Training Supervisor
R. Cimmino, Nuclear Training Instructor
D. Ashey, Nuclear Training Instructor

NRC Personnel

S. Shaffer, Senior Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

NONE

Closed

NONE

Discussed

NONE

ADAMS DOCUMENTS REFERENCED

Accession No. ML091070550 – FINAL-Written Exam
Accession No. ML090700829 – FINAL-Operating Exam
Accession No. ML091120121 – FINAL-Post Exam Comments
Accession No. ML091350479 – Written Exam Analysis

ATTACHMENT 2

Licensee's Post Written Examination Comments Publically Available
ADAMS Accession No. ML091120121

Note: The licensee's post exam comments regarding three questions (i.e., RO #35, SRO 77 and 98) were received by the NRC on March 23, 2009. After initial review, the NRC provided the licensee comments and requested additional information on March 25, 2009. The licensee provided additional references and submitted revised comments for these questions, dated and received in Region I on March 31, 2009 (see below). On April 15, 2009, the licensee withdrew their post exam comment regarding RO question #35. During the exam there was one question asked regarding SRO question #77 but there were no questions from the applicants regarding either RO question #35 or SRO question #98. The NRC's resolution for these post exam comments is based on the independent reviews that were conducted by two NRC examiners assigned to the exam team as well as the Branch Chief.

<u>Final Submittal for SRO Question #77 (#2):</u>

While performing a plant cooldown, the crew was about to place Shutdown Cooling (SDC) in service with "A" and "B" Reactor Coolant Pumps (RCPs) in service, when Pressurizer Pressure Narrow Range Instrument, P-103-1, suddenly fails high.

Which of the following describes the impact of this failure and the action that the US must direct to stabilize the plant?

☑ **A** The "A" Power Operated Relief Valve (PORV) will open and RCS pressure will rapidly lower.
Place the "A" LTOP switch to "High", close PORV Block Valve, secure the "A" and "B" RCPs, and place SDC in service.

☐ **B** The Facility 1 Safety Injection Tank (SIT) outlet Valves will open causing the SITs to inject.
Override and close the SIT Outlet Valves and restore Pressurizer level to the desired setpoint.

☐ **C** SDC Suction Isolation Valve, SI-652, will NOT open until the high pressure input is cleared.
Direct I&C to bypass or disconnect Pressurizer Pressure Narrow Range Instrument, P-103-1.

☐ **D** The "B" Power Operated Relief Valve (PORV) will open and RCS pressure will rapidly lower.
Immediately place the associated PORV Block Valve to 'Close' and log into the LTOP Technical Specification LCO.

Submitted Answer Justification:

A is correct. In this alignment, the LTOP switch is in the LOW position, resulting in the low pressure setpoint being applied to the PORVs. If Pressurizer Pressure Narrow Range Instrument, P-103-1, suddenly fails high, the "A" PORV will open resulting in RCS pressure rapidly lowering. The PORV can only be closed by placing the "A" LTOP switch in the HIGH position. The rapid reduction in RCS pressure will result in the loss of NPSH for the RCPs, so they must be secured. With the loss of the RCPs, core cooling must be established by initiating SDC.

B is incorrect. Although the Facility 1 SIT Outlet Valves get an open signal from the failed pressure instrument, the present plant alignment requires the pressure input to be bypassed to prevent inadvertent opening.

C is incorrect. The high pressure input to the SDC Suction Isolation Valves has been removed. Additionally, P-103-1 (Facility 1) does NOT align with SI-652 (Facility 2).

D is incorrect. The "B" PORV will NOT open as it is NOT associated with P-103-1. Additionally, if P-103 failed high, attempting to close the "B" PORV would NOT work because it is interlocked open with the "B" LTOP switch set to LOW.

Licensee's Justification For Change For SRO Question #77 (#2):

The original correct answer for this question is choice "A". The original draft answer did not include the phrase, "*and place SDC in service*." In-house validation suggested that this phrase be added to complete 'the action that the US must direct to stabilize the plant'; however, SDC cannot be placed in service with Pressurizer Pressure instrument, P-103-1, failed high. As a result of the instrument failure, SDC Isolation Valve, SI-651, will be interlocked closed, preventing SDC from being placed in service. This error was not recognized during subsequent validation.

The stem of the question asks what must be done "*to stabilize the plant*." While the actions to "*place SDC in service*" would certainly stabilize the plant, the time required to do so to meet choice "A" are unrealistic. Manual operation of Shutdown Cooling Isolation Valve, SI-652 in Containment would far exceed allowable radiological dose (200 - 300 mr/hr) and the time necessary to determine inputs to the valve from P-103-1 would require in-depth circuit analysis since there are no procedures readily available to override or defeat this interlock.

The question does not indicate what RCS temperature is at the time of the instrument failure. Therefore, in this situation, once RCPs are secured it can be assumed that the cooldown would be stopped and RCS temperature stabilized using the steam generators while natural circulation develops. This was not a selection option for this question.

If Shutdown Cooling Isolation Valve, SI-651, cannot be opened due to the failure of Pressurizer Pressure instrument, P-103-1, then, obviously, Shutdown Cooling cannot be placed in service to meet choice "A"; therefore, choice "A" is incorrect. All other answers have been validated as being incorrect; therefore; SRO question #77 (2) has NO correct answer.

NRC RESOLUTION FOR SRO #77 (#2):

The NRC conducted detailed reviews of all references provided and concluded that the NRC accepts the licensee's recommendation to delete this question.

The stem of the question asks, "Which of the following describes the impact of this failure and the action that the US must direct to stabilize the plant." In this alignment, the LTOP switch is in the LOW position, resulting in the low pressure set-point being applied to the PORVs. If Pressurizer Pressure Narrow Range Instrument, P-103-1, suddenly fails high, the "A" PORV will open resulting in RCS pressure rapidly lowering. The PORV can only be closed by placing the "A" LTOP switch in the HIGH position. The rapid reduction in RCS pressure will result in the loss of NPSH for the RCPs, so they must be secured. However, the Shutdown Cooling System (SDC) cannot be placed in service with Pressurizer Pressure instrument, P-103-1, failed high. As a result of the instrument failure, SDC Suction Isolation Valve, SI-651, will be interlocked closed, preventing SDC from being placed in service. Procedurally, the Low Pressure Safety Injection system, SDC heat exchangers, and interconnecting piping can not be exposed to reactor coolant system pressure greater than 265 psia or temperature greater than 300° F. To protect the piping against excessive pressure the SDC Suction valves SI-651 and SI-652 are interlocked with the low range Pressurizer pressure channels (P-103 and P-103-1). Shutdown Cooling Isolation Valve, SI-651 is located in a high radiation area such that it would take some time to establish a plan, brief, and authorize entry into containment to manually open the valve. In addition, there are no direct methods or procedures readily available to override or defeat this interlock.

Once the RCPs are secured then the crew would transition to EOP 2528 (Loss of Offsite Power/Loss of Forced Circulation), steps 7 through 11 direct the operators to continue the cool down using the steam dumps to control temperature and establish single phase natural circulation while maintaining at least one steam generator in band. Under the conditions given in the question stem, the crew would be expected to stabilize the primary temperature using natural circulation and secondary steam dump valves. This was not a selection option for this question. If Shutdown Cooling Isolation Valve, SI-651, cannot be opened due to the failure of Pressurizer Pressure instrument, P-103-1, then, obviously, Shutdown Cooling cannot be placed in service as stated in choice "A"; therefore, choice "A" is incorrect. All other answers have been validated as being incorrect; therefore; SRO question #77 (2) has NO correct answer and should be deleted.

Final Submittal for SRO Question #98 (#23):

A Fuel Handling Accident has occurred inside Containment as evidenced by several Containment process and area radiation monitors rising or in alarm. All personnel were immediately evacuated.

In order to limit personnel exposure, per AOP-2577 (Fuel Handling Accident), the Shift Manager must ensure which of the following are performed?

☑ **A** The Containment (Outage) Equipment Hatch must be closed no more than 30 minutes after the event.

☐ **B** Containment Purge valves, AC-4, 5, 6, and 7 must be closed no more than 50 minutes after the event.

☐ **C** The Transfer Tube Isolation Valve, RW-280, must be closed no more than 50 minutes after the Transfer Carriage is in the SFP

☐ **D** One train of CRACS must be operating in Recirculation mode no more than 30 minutes after the event.

Submitted Answer Justification:

A is correct. Per AOP-2577 (Fuel Handling Accident), Rev. 008-02, Section 1.0, Containment must be isolated within 30 min. of the event.

B is incorrect. The Containment Purge Valves would be closed for a Fuel Handling Accident in Containment, but they would likely have closed automatically. However, if the auto actuation has not occurred, they must be manually closed immediately.

C is incorrect. The Transfer Tube Isolation Valve, RW-280, is not included in the components that must be closed for Containment Isolation in a Fuel Handling Accident as the opening is low in the refuel pool. This valve would be closed for a loss of Refuel Pool level and takes about 30 minutes to close.

D is incorrect. The calculation for the Control Room radiological exposure following a Fuel Handling Accident is based on having at least one Control Room Air Conditioning train operating in the Recirculation mode within 60 minutes of the event. The calculations used to require recirc mode within 10 minutes. However, new calculations recently changed the requirement to 50 minutes with a 10 minute penalty for other system alignment complications. (AOP-2577 had NOT yet been updated when the question was written.)

Licensee's Justification For Change For SRO Question #98 (#23):

The original correct answer for this question is choice "A"; however, given that the stem of the question asks the examinee what must be done "*to limit personnel exposure*", it could be argued that choice "D" is also correct. Choice "D" states, "*One train of CRAC must be operating in Recirculation mode no more than 30 minutes after the event*." This is not an incorrect action in order to limit personnel exposure.

In 2007, Millstone Unit 2 (MPS2) implemented License Amendment No. 298 to Technical Specifications (TAC NO. 2346). This amendment revised the MPS2 licensing basis in the area of radiological dose analysis for design-basis accidents using the alternative source term (AST) as permitted by 10CFR50.67.

Full implementation of the AST at MPS2, as defined in Section 1.2.1 of RG 1.183, required re-analysis of the following accidents: LOCA, Fuel Handling Accident (FHA), Cask Tip Accident, SGTR, MSLB, CREA. In all of the re-analysis performed, for accidents which required the Control Room Air Conditioning System (CRACS) to be placed in the filtered, recirculation mode, the required time for operator action was changed from the previous 10 minute requirement to "within 1 hour".

AOP 2577, "Fuel Handling Accident," includes as part of the 'Discussion' section the following statement:

> "*Control Room radiological exposure following a fuel handling accident in containment is calculated on having at least one train of CRACS operating in the recirculation mode within 10 minutes of the accident*."

This statement within AOP 2577 is <u>only</u> a statement of fact from the previous requirement before implementation of the AST approach at MPS2. Procedure step 3.5 in AOP 2577 includes actions necessary to place the CRAC System in filtered recirculation; however, there is <u>no</u> specified time requirement for implementation of this step.

Prior to attending license school, the SRO Upgrade candidates attended a presentation (C07601), as part of Licensed Operator Requalification Training concerning the Alternate Source Term and the affect on Control Room Air Conditioning (CRAC) System and the time change to "within 1 hour" for filtered recirculation.

Additionally, OP 2260, "EOP User's Guide" was revised to reflect the re-analysis and implementation of the AST. The time chosen was a conservative 50 minutes (rather than 1 hour by the accident analysis), to place the CRAC System in filtered recirculation for LOCA, SGTR, and MSLB accidents.

Since placing the CRAC System in filtered recirculation mode is credited as part of the accident analysis for FHA to limit personnel exposure, and given the absence of any procedure directed time requirement within AOP 2577, it can be argued that choice "D" is also an acceptable answer, since 30 minutes is "within 1 hour" as outlined in the accident analysis. Therefore, examinees should be given credit for both choice "A" and choice "D".

A post-exam Condition Report (CR325747) has been generated to identify the modification required for AOP 2577, "Fuel Handling Accident."

NRC RESOLUTION FOR SRO #98 (#23):

The NRC conducted detailed reviews of all references provided and concluded that the NRC disagrees with the licensees recommendation to accept both answers "A" and "D" as correct answers. We have determined no key changes are required. The key answer is correct and all other choices are incorrect.

In 2007 Millstone Unit 2 implemented License Amendment No. 298 to Technical Specifications (TAC NO. 2346). This amendment revised the MPS2 licensing basis in the area of radiological dose analysis for design-basis accidents using the alternative source term (AST) as permitted by 10CFR50.67. In the re-analysis performed, for accidents which required the Control Room Air Conditioning System (CRACS) to be placed in the filtered, recirculation mode, the required time for operator action was changed from the previous 10 minute requirement to "within 1 hour". Prior to attending license school, the SRO Upgrade candidates received training on this change which resulted in revisions being made to the technical specifications and OP 2260, "EOP User's Guide". AOP-2577 has not yet been updated to reflect this change and includes as part of the 'Discussion' section the following statement "Control Room radiological exposure following a fuel handling accident in containment is calculated on having at least one train of CRACS operating in the recirculation mode within 10 minutes of the accident."

The questions asks, "In order to limit personnel exposure, per AOP-2577 (Fuel Handling Accident), the Shift Manager must ensure which of the following are performed?" The question is focused on which of the following actions are required to be directed per AOP-2577. Clearly "A" is correct since AOP-2577 section 1.0, states the Containment must be isolated within 30 minutes of the event. Answer choice "D" states, "One train of CRACS must be operating in Recirculation mode no more than 30 minutes after the event". The AOP does not specify a time limit for placing CRACS in recirculation mode. However, it does state that radiation exposure following a fuel handling accident in containment is calculated on having at least one train of CRACS operating in the recirculation mode within 10 minutes of the accident. This AOP statement strongly implies a limit of no more than 10 minutes. The licensee has reasoned that Choice D should be accepted as a second correct answer because the alternate source term analysis and associated TS and EOP changes have changed the requirement for establishing recirculation mode to 50 minutes. Choice D states CRACS must be operating in recirculation mode no more than 30 minutes after the event, which is neither 10 minutes (the limit implied in AOP-2577) nor 50 minutes (the limit stated in the EOPs). Choice D is a technically incorrect statement of requirements and therefore a wrong answer.