UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

October 13, 2000

MEMORANDUM TO: Bruce Boger, Chief
Division of Inspection Program Management
Office of Nuclear Reactor Regulation
/RA/

THROUGH: Charles Casto, Director
Division of Reactor Safety, Region II
/RA/

FROM: Stephen J. Cahill, Chief
Division of Reactor Projects, Branch 2, Region II

SUBJECT: RESULTS OF REGION II REVIEW OF OPERATOR LICENSING APPEAL (Reference: [redacted] - McGuire Senior Reactor Operator Applicant; Docket # [redacted]

Attached are the results of the Region II independent review of the appeal package submitted by [redacted] to you dated July 13, 2000. Our review was separated into two efforts: first, an in-depth review of the technical aspects of her appeal contentions; secondly, an independent management review of her allegations of bias and improper examiner conduct.

The technical review was done by a qualified Region II examiner (Larry Mellen) who was independent of the administration or grading of the initial McGuire examinations. This review was done in accordance with the requirements of NUREG 1021, Operator Licensing Examiners Standards for Power Reactors, Revision 8, and consisted of an analysis of the examination materials, the applicant's comments, and the proposed failure grading documentation.

The management review was performed by Stephen Cahill, who has prior operator licensing experience. The review was conducted per the guidance of Region II Office Instruction 1801, Handling of Allegations of Improper Actions by NRC Employees, revision 4. This effort consisted of obtaining independent written statements from the examiner and examiner trainee of record, independently interviewing all of the NRC staff involved with this exam, and reviewing the original examination materials and examiner grading documentation against the applicant's allegations.

The results of the two reviews were then integrated and organized to address the contentions as delineated in the applicant's appeal package. However, some recurring themes and performance issues are addressed globally in the beginning to preclude addressing them repetitively. The results are included as Attachment 1, and are formatted and phrased to be a stand-alone document. For cross-referencing, a copy of the applicant's appeal package is included as Attachment 2, and a copy of the NRC original proposed denial is included as Attachment 3.

In summary, our conclusion was that the failure of the operating exam was adequately justified by the examiners. The technical review resulted in one change to a simulator competency grade that did not alter the final failing grade determination. Although the appeal raised several issues of perceived bias and inappropriate examiner behavior, many of them were easily explainable as
normal parts of an initial operator license examination. Our integrated review did not reveal any motivation or evidence of bias and determined that the behavior of the examiners was professional. The appeal also raised issues with poor examiner performance, particularly with cuing problems by the examiner trainee during one job performance measure (JPM). These were partially substantiated and may have contributed to elevated levels of applicant stress. However, the JPM was adequately redone and the applicant given several opportunities to correct her performance mistake which she did not. Our review determined the cuing mistakes and any examiner performance problems did not adversely impact the validity of the examination. The applicant displayed multiple examples of poor performance which were observed by multiple NRC staff examiners, many of which were not appealed. This constituted the basis for the failure determination. The examiners appropriately documented the poor performance and the applicant did not provide adequate information to refute their conclusions.

If you have any questions on the results of this review, please contact Steve Cahill at 404-562-4520.

Attachments: 1. Region II Independent Review Results
2. Appeal Package from [redacted] dated July 13, 2000
3. Individual Examination Report for 5[redacted] - Proposed Denial dated 6/23/00

cc w/atts: B. Mallett, RII
D.Trimble, NRR

*See previous concurrence page for signature.

OFFICE	RII:DRP													
SIGNATURE	*sjc													
NAME	SCahill													
DATE	10/	/2000	10/	/2000	10/	/2000	10/	/2000	10/	/2000	10/	/2000	10/	/2000
E-MAIL COPY?	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\McG Appeal Response.wpd

REGION II REVIEW OF APPEAL BY [redacted]
SENIOR REACTOR OPERATOR (SRO) INSTANT APPLICANT (docket # [redacted])
McGUIRE NUCLEAR STATION

SUMMARY

In response to the applicant's letter of July 13, 2000, the NRC reconsidered the proposed denial issued on June 23, 2000, and reviewed the grading of the operating test administered to the applicant during the weeks of May 8 and 22, 2000. The NRC performed separate technical and management reviews of the applicant's contentions which were integrated to arrive at a comprehensive conclusion. The technical review was done by examiners independent of the original McGuire exam administration and consisted of an analysis of the examination materials, the applicant's comments, and the proposed failure grading documentation. The management review was done by an independent Region II manager who has previous operator licensing experience. This manager was also from the Division of Reactor Projects, a division separate from the operator licensing group. This latter effort consisted of obtaining independent written statements from the examiner and examiner trainee of record, independently interviewing all of the NRC staff involved with this exam, and reviewing the original examination materials and examiner grading documentation against the applicant's contentions.

The technical review determined that one simulator operating test competency grade was not warranted and adjusted the associated grade upwards. After careful review of all of the applicant's contentions individually and in the aggregate, the management review determined that the applicant's contentions of bias, inappropriate examiner behavior, and being examined to a higher standard were not substantiated and did not warrant altering any of the original grades. The majority of the applicant's contentions were readily explainable and were normal aspects of the initial license exam process. The applicant also raised contentions regarding poor examiner performance, particularly with cuing problems by the examiner trainee during one job performance measure (JPM). Although these were partially substantiated, the JPM was appropriately re-administered and the applicant was given several opportunities to correct her performance error. The review determined the cuing mistakes did not adversely impact the validity of the examination results. The presence and occasional intervention of a separate independent lead examiner mitigated the effects of any poor trainee performance concerns. The review concluded that examiner performance did not adversely impact the validity of the examination results and the applicant was not placed at an unfair disadvantage.

Although a grade for one competency on the simulator operating test was altered, it was inconsequential. The review has determined that the applicant continued to receive overall failing grades on both the control room systems and facility walk-through (Category B) and simulator operating portions (Category C) of the operating test. The proposed denial is sustained. The applicant displayed multiple examples of poor performance, many of which were not appealed. The basis for the failure determination was inadequate operating exam performance which the examiners appropriately documented and which the applicant did not provide adequate information to refute. A revised grading summary table is at the end of this document.

Attachment 1

DETAILS

The following review comments are organized to address the individual contentions in the applicant's appeal package except that some recurring themes and performance issues are addressed here to preclude addressing them repetitively.

Common Themes

I. Bias and Intimidating Atmosphere

A. Inappropriate Examiner Behavior

The applicant's appeal raised several examples of alleged inappropriate behavior, including an indignant tone of voice, angry looks, and improper comments. The appeal also contended that the trainee examiner was trying to look good in front of his evaluator, was embarrassed by incidents that occurred during the exam and was taking them out on the applicant, was therefore biased towards the applicant, and was unfamiliar with the examination material.

The lead examiner accompanied the trainee examiner on every aspect of the applicant's exam and witnessed the course of events associated with each of the above examples. Through independent interviews with both the examiner and trainee and with other examiners, the reviewer determined that the trainee examiner's behavior was professional. The events were largely one of perception, and the perception of the independent witness was that the events were not inappropriate. Additionally, the examiners were informed during the final week of walk-through exams that the applicant was concerned about disparate treatment. The examiners both indicated that they were sensitive to this concern and attempted to avoid any situations or conditions that would exacerbate the concern. The bathroom break conversation alluded to by the applicant (appeal page 28) was an attempt by the examiners to alleviate tension and make conversation. The inferences interpreted by the applicant were not intended. The interviews revealed that the trainee had been frustrated by some of the mentioned events and had allowed his emotions to be visible but the review did not reveal any bias or motivation to fail the applicant on the part of the trainee. Even if it did, the lead examiner was the examiner of record for the applicant's grading and the trainee would have been unable to exert any bias. The applicant was essentially given an independent evaluation by the lead examiner. All of the assessment comments in the applicant's evaluation were based on performance observed jointly by both the trainee and lead examiner. Any observation that was not corroborated by the lead examiner was not included in the applicant's performance assessment. The NRC trainee evaluation process does not offer any motivation or incentive for a trainee to find flaws or to fail an applicant. The applicant contended that she would have certainly passed had she been evaluated by a more experienced examiner (appeal page 31). She was evaluated by the very experienced lead examiner which did not alter the assessment of her performance.

The review also determined that both the trainee and lead examiner were familiar with the examination materials. They had reviewed and observed the material being performed during the exam preparation week prior to administering the exams. They also discussed applicant performance expectations with the licensee's exam development representatives.

B. Examined to a Greater Degree Than Others

The appeal identified several examples that were alleged to hold the applicant to a higher standard of performance. These included: a JPM to depressurize and reset safety injection (SI) that was not stopped at the same point as it was for others; the assignment of the applicant in a third scenario as a "balance-of-plant" (BOP) operator; and the assignment of the applicant to a group examined by the trainee examiner in which she was the only person without prior Navy experience.

These were normal and expected parts of an initial license examination. The basis for continuing the JPM in question was that the applicant had not established positive control of the plant. The need to continue was shared by both examiners. The applicant received a third scenario beyond the required two because she was in a group that included another SRO-instant applicant and an SRO-upgrade. This required three scenarios in order for each applicant to receive a required scenario in the SRO position. This schedule also required the other two aforementioned SRO applicants to receive a third scenario. Assignment of the applicant to the BOP position was not an adverse action. The reactor operator (RO) and BOP positions are equivalent board assignments for licensed operators. The other two SRO applicants were evaluated twice in the RO and BOP position respectively. A case could be made that the applicant's assignment to perform as both the RO and BOP operator was more balanced and therefore fairer than the other two. The assignment of positions in the final scenario was essentially random. The creation of a schedule requiring three scenarios for this group was necessary and normal due to the assortment of applicant types in this initial examination and the differing scenario requirements for each. SRO-Instants have the most scenario requirements and have never been examined before. Consequently, they are routinely subject to three scenarios unless a specific combination of RO and SRO-Upgrade candidates are available to form a crew that would only require two scenarios. This avoids the undesirable use of simulator stand-in personnel to complete an operating crew. The specific combination of applicants was not available in the McGuire applicant pool to support only two scenarios. The schedule was generically created in advance with licensee training staff assistance and the subsequent assignment of names to the scheduled slots was random. The review did determine that the basis for the schedule could have been explained better by the examiners during the prep week and examination week briefings of the applicants. This would have eliminated the perception of disparate treatment the applicant discussed. The applicant was not examined to a greater degree than the other SRO-instant applicant. The assignment to a group consisting of ex-Navy operators was coincidental and had no bearing on the outcome of

the exam. The standards are the same for all applicant's, regardless of experience or background.

Initial examinations are highly pre-scripted with critical tasks and key performance elements determined in advance with facility training representatives. There is little, if any, opportunity to hold any single applicant to a higher standard of performance. The review found the applicant was examined fairly and in a normal fashion.

II. Incorrect Examination Administration

A. Cues Lacking or Inappropriate

This contention was substantiated. Although the trainee is an experienced and previously qualified examiner, he did experience some difficulty over the course of some exams he administered and significant difficulty with one particular JPM. The source of the problem was due both to the trainee's difficulty in keeping up with the procedure and the applicant's method for performing the simulated task. The applicant verbalized how several actions would be performed instead of simulating them and the examiner therefore did not progress through the exam material as the applicant was expecting. Regardless, the lead examiner intervened and expectations for JPM performance were clarified. The JPM was re-performed and the applicant given an appropriate opportunity to demonstrate successful performance. Specific aspects of the one JPM in question are discussed in the response to that JPM. The lead examiner documented the cuing problems in the trainee's evaluation and action was taken by the trainee to improve his cuing skills. The applicant's appeal did not identify any other specific examples of incorrect cuing that affected the results of the examination. The review determined that any cuing problems did not affect the examination results.

B. Incomplete & Inaccurate Documentation

The appeal mentioned several examples of documentation problems. However, the review did not validate any of the discrepancies and determined that the examiner's documentation of the examination results was complete. The documentation accurately reflected the examiners observations which were witnessed by at least two NRC examiners in all cases. The examples the applicant provided for incomplete documentation were not found to not be germane to the pass/fail determinations and were appropriate not to have been documented. The documentation was found to meet the requirements of NUREG 1021, revision 8.

C. Conclusions by Inference - Lack of Follow-up Questioning

The appeal mentioned several examples of documented performance problems that were not followed up with questions from the examiners. The applicant claimed a knowledge deficiency was inferred that would have been disproven had she been asked follow-up questions. For the majority of these cases, the review determined that the

wording of the headings in the examination documentation for the problems should have been "Lack of Knowledge or Ability." For the provided examples, the exhibited performance indicated a lack of ability and was sufficient to justify the assigned grades without follow-up questioning to determine the applicant's knowledge level. The review did not validate that any conclusions used as the basis for a pass/fail grading decision were inferred due to a lack of follow-up questioning. The review found the examiners followed the NUREG 1021 revision 8 guidelines for follow-up questioning and generally only asked questions when warranted and needed for a grading decision. The reviewers found the examiners did ask many appropriate follow-up questions when the applicant took unexpected or erroneous actions.

D. Follow-up Questioning Not Clear

The appeal discussed a few examples where the trainee's follow-up questions were not clear. These contentions were generally substantiated. The lead examiner did have to intervene once or twice to clarify a question. However, he also noted, that while the trainee experienced intermittent difficulty, the trainee rephrased questions when needed and the resultant question was adequate to elicit the needed information. Consequently the lead examiner did not have to intervene in the other examples. Options to improve the follow-up questioning skills of the trainee will be evaluated as a follow-up action. As noted above, there were not any examples where a knowledge or performance deficiency was inferred due to a lack of or poor follow-up questioning.

III. Inconsistent Grading Between Applicants and Between Examiners

The applicant frequently compared her grading results to those of other applicants. The review determined that in most of the cases, there were distinct differences in the performance level between the compared applicants. The examiners documented very specific differences in their exam notes that justify the assigned grades. The applicant also did not observe the compared performances so the contentions were often simplified comparisons that did not capture the pertinent performance differences. Also, examiners have leeway per NUREG 1021, revision 8, to not document minor problems for applicants that have clearly passed. Therefore, some identical deficiencies documented in the applicant's evaluation in order to develop a pattern of knowledge or ability problems may not have been documented on another applicant's evaluation.

Specific Applicant Contentions

Applicant comment pages 4,5
ES-303-1, B.1.c, pages 7-9.
Grade: U

Applicant Comment Summary: Other applicants were stopped upon blocking the low pressure SI signal. This was an inconsistency between examiners in administration of this JPM. The applicant was held to a higher standard and graded in too severe a manner. The applicant was

also given no cue that a cooldown was not occurring as expected and consequently the examiner drew an incorrect inference on the answer provided for system temperature changes. The JPM task was satisfied and SI was reset twice when the system was depressurized to 1905 psig. At no time did the applicant approach the SI set point in an uncontrolled manner. The examiner inappropriately marked this JPM as failed due to his incorrect inference associated with the applicant's answer to a question and also due to an inappropriate claim of lack of ability.

NRC Review Conclusion: The examiners had determined that the applicant did not adequately demonstrate familiarity with the controls and that it was appropriate to continue the JPM observation. Specifically, the applicant had all pressurizer heaters on during and following the first reset of SI. The plant was therefore not stabilized below 1905 psig as was directed in the assigned procedural steps and the JPM task standard. In this case, it would be appropriate for an examiner to continue the JPM and allow an applicant a further opportunity to demonstrate their ability to fulfill the task standards. The primary reason the plant re-pressurized and the applicant had to reset SI again was because all of the pressurizer heaters were on. A very small cooldown was in progress throughout the JPM and was established by the simulator operator. The standard for this JPM task was to perform a controlled depressurization to below 1905 psig and to stabilize below that value while maintaining regenerative heat exchanger letdown temperature less than 380 degrees F and pressurizer spray differential temperature less than 320 degrees F. As documented in the original denial, the applicant did not fulfill these critical tasks and this performance deficiency was the basis for the assigned failing grade. The resultant follow up questions on system temperature changes and the applicant's answers were not the basis for the assigned failing grade. The applicant did not dispute the task standard performance so the grade is unchanged.

Applicant comment pages 6-8
ES-303-1, B.2.b, page 14.
Grade: U

Applicant Comment Summary: During performance of this JPM, upon reaching step 3.5.1 of the procedure the applicant verified the line volt meter was between the 3960-4360 band. The applicant received no cue at this point and proceeded with step 3.5.2 which directs matching D/G and line voltage. The applicant expected a cue as the D/G volt meter was indicating 0 volts. After waiting 5-10 seconds, the applicant stated she was going to assume the D/G and line volts were matched and she continued on to step 3.5.3. The examiner then stopped the applicant and pointed to a place on the line voltage meter with a pen. At no time did the applicant receive any verbal cues as to the line voltage reading. The applicant again stated she was going to assume the voltages were matched and stated if the line voltage and D/G voltage were not matched, she would have to either raise or lower D/G voltage to match the line voltage to the D/G voltage. There was no record of this comment. The applicant indicated by direct statements a knowledge that the voltage would need to be adjusted if a mismatch existed.

The examiner evaluation stated that a 160 volt difference could have damaged equipment damage or caused personnel injury. There is no evidence to support these consequences.

Also, in her attempts to explain the need to perform the task quickly to the trainee examiner, he acted irritated and informed the applicant in a loud, indignant manner that she must perform the procedure step by step and in order. The lead examiner stepped in at this point and explained to the examiner that the applicant was only trying to describe how the procedure would actually be performed. Per NUREG-1021, "an examiner must be familiar with the JPM to accurately evaluate performance."

NRC Review Conclusion: The applicant's contentions differ significantly from the examiner's documented notes and recollection of the JPM. Based on the examiners independent statements on the sequence of events in this JPM, the grading is appropriate. Neither examiner has any recollection of the applicant stating the above assumptions. As discussed in Common Themes section II.A, cuing problems did occur on this JPM and the JPM was suspended. It was then re-initiated and the applicant was given ample opportunity to display adequate performance. The applicant was not downgraded for any performance on the initial JPM attempt with the deficient cues or her assumptions. The applicant was subsequently given appropriate visual and verbal cues three times indicating that line voltage was 4000 volts and D/G voltage was 4160 volts which would necessitate a change in D/G voltage in order to be matched. The grade was based on the applicant's failure to match voltages. The applicant repeatedly stated it was not necessary to adjust voltage because line voltage was in the required initial condition band of 3960-4360 volts. The examiner confirmed this after the JPM with follow-up questioning during which the applicant stated she would only perform an adjustment if voltages were outside the band (which could potentially allow a 400 volt difference). The basis for the band is a minimum design voltage requirement for the bus to carry engineered safeguards loads. It is not intended to allow large voltage differences while paralleling sources. The applicant did not make any voltage adjustments on the D/G prior to paralleling the breaker. Consequently, the task standard to match voltages was not fulfilled and the assigned failing grade is unchanged

The discussion of consequences is conjecture on the part of the examiner and is not relevant to the pass/fail decision. While the applicant may be correct in her contentions, the review did not technically evaluate the consequences of paralleling a breaker with a 160 volt difference. The applicant comments on the trainee's tone of voice and his familiarity with the JPM are addressed in the Common Themes discussion.

Applicant comment page 9
ES-303-1, B.2.c
Grade: S

Applicant Comment Summary: The task was to emergency borate RCS locally. When the examiner administered the JPM to this applicant, she was handed the initial condition sheet and was required to perform the JPM based on this information only. When this same examiner administered this JPM to another applicant, he was handed the emergency boration procedure. This JPM is an example of inconsistency of this examiner.

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NRC Review Conclusion: This contention was substantiated. The trainee erroneously handed the other applicant a copy of the procedure without being asked because divider tabs had not been placed in the JPM test packages. This was corrected for subsequent exams including the applicant's exam. It was a mistake that had no impact upon the grading of the examination. The applicant passed this JPM without comment. Due to the nature of this task, being provided a procedure copy would not offer any advantage to an applicant.

Applicant comment pages 10,11
ES-301-1, Competency C.8.b, page 31
Grade: 2

Applicant Comment Summary: During Scenario #1, as Control Room SRO, the applicant was informed by the BOP that the letdown orifice isolation valve 1NV35 had failed to close when 1NV2 closed. The applicant referred to the Test Acceptance Criteria book to determine any potentially affected Technical Specifications (TS) sections for a potential inoperability associated with this valve. The BOP then informed the SRO that he had failed to inform her that Pressurizer Level Channel 1 had failed low which had caused the loss of letdown and the SRO should refer to the channel failure in Technical Specifications. This does not indicate a lack of knowledge by the applicant but was an example of good teamwork. There is no information to support the claim that the applicant displayed a lack of familiarity with and ability to apply Technical Specifications to a component that had failed. The applicant performed correctly based on the provided information. She used the references correctly based upon the failure that was identified.

NRC Review Conclusion: This examiner comment was not a basis for the applicant's examination failure since she passed competency C.8. The review confirmed, after interviewing all four NRC examiners present for this scenario, that the crew did not recognize the initial failure of a pressurizer level channel failure for a significant time. The applicant remained focused on valve 1NV-35 from a TS perspective even after being informed of the pressurizer level failure. Several examiners observed the BOP waiting for the applicant to recognize the correct TS prior to him informing her to enter TS 3.3.1 for the instrument failure. The anchor for a grade of 2 for competency C.8.b is "had difficulty locating TS; had to search through index and body of document." The grade is appropriate for this occurrence.

Applicant comment page 12
ES-301-1, Competency C.7.a, page 30
Grade: 2

Applicant Comment Summary: During Scenario #1 as the SRO, an ATWS occurred. The applicant recognized the ATWS and entered procedure FR-S.1 which procedurally directs the SRO when to send someone to open the Reactor Trip Breakers at step 7. The applicant had been trained to follow the procedure during an ATWS event and her priority was to guide the crew through the red path functional restoration procedure. She had been trained that her first responsibility was to implement the procedure with the crew and not take time away from

progressing through the procedure to dispatch a non-licensed operator to open the Reactor Trip Breakers prior to Step 7 of the procedure. Her actions were correct. The SRO of the other crew that performed this same procedure and was not penalized in his grading for this action. The applicant's actions were in accordance with the licensee guidelines of proper procedure use and adherence. The applicant was graded too severely.

NRC Review Conclusion: The anchor associated with a grade of 2 for competency C.7.a, is "Minor instances of failure to take action within a reasonable period of time." Although the applicant performed the FR-S.1 steps in order, the examiners observed that the applicant was waiting on the crew performance of each step and had ample opportunities to dispatch operators to the breakers. The documentation supplied by the applicant (attachment 4; page 38 of 50) discusses that it is prudent to perform this local action as soon as possible without interrupting the priority of the FR-S.1 actions. The judgement of the examiners was that the applicant had sufficient opportunity to take this prudent action. The other applicant mentioned above took the action within one minute which was considered prudent vice the four minutes it took Ms. Thomas. However, there is no objective evidence to indicate that four minutes is not a reasonable period of time for performing this action. The score of 2 is inappropriate and will be changed to 3.

Applicant comment page 13
ES-301-1, Competency C.4.c, page 22.
Examiner Grade: 2

Applicant Comment Summary: During Scenario #1 as the SRO reading procedure FR-H.1 step 17e, the applicant received a negative response and the procedure directed a progression to the response-not-obtained (RNO) column of step 17i. Upon turning the page, the applicant inadvertently read the expected-response-obtained (ERO) column of step 17i to the crew, when she realized it did not make sense and looked at the control board to ensure the main steam isolation valves (MSIVs) were closed and verified this with the RO. At this point, the applicant looked back in the procedure and concurrent with the applicant's realization of the correct flow path, the BOP verbally confirmed the correct flowpath with a peer check. The applicant was aware the MSIVs were closed and had been closed earlier which is supported by the fact that she questioned the RO upon reading the ERO of step 17i. If the applicant had not been aware of the MSIVs being closed, she would not have questioned the validity of the step. There is no action performed by the applicant or information supporting a lack of ability to remain cognizant of plant conditions. The applicant did not direct the crew to perform any inappropriate actions and, therefore, did not improperly execute the emergency procedures. No steps were improperly executed; therefore, the applicant executed the emergency procedure properly. The examiner inappropriately identified two areas of lack of ability due to his drawing incorrect inferences and grading too severely.

NRC Review Conclusion: The examiners documentation indicated that the applicant directed dumping steam to the condenser at a maximum rate. The BOP questioned this incorrect direction before it was performed. Had the applicant questioned this step prior to directing it or had briefed it with the crew, it could be implied that the applicant was cognizant of plant

conditions and aware that the step could not be performed. However, since the error appears to have been corrected because of the actions of the BOP, the examiner's comment was appropriate. The applicant's contention that she verified the MSIVs were closed with the RO was not supported by the observations of the multiple NRC examiners present for this scenario. The examiners observed the applicant direct the RO to perform the incorrect step 17i ERO action and only after the prompt of the BOP did the applicant observe the control board and recall that the MSIVS were closed. The examiners did not observe the applicant question the validity of the step until prompted by the BOP. The anchor associated with a grade of 2 for competency C.4c, is "Crew occasionally had to question SRO regarding status; allowed lapses in implementation by crew." Since the crew intervened to ensure the procedure was correctly implemented, a grade of 2 is appropriate.

Applicant comment page 14
ES-301-1, Competency C.4.b, page 21.
Examiner Grade: 1

Applicant Comment Summary: During this scenario, the applicant was the Control Room SRO. The consequences of the applicant's actions are incorrect. The applicant states that the SI was occurring as a result of the feed and bleed process. The examiner stated that the scenario ended with a lo FWST level, an SI and an eventual transition to ES-1.3. SI was continuing in accordance with proper procedure use and adherence. The crew did not receive a low FWST level and did not enter ES-1.3. This is an example of the applicant being graded too severely.

NRC Review Conclusion: The MSIV and feed water isolation signals were due to not blocking the Pressurizer SI and Low Steam Line Isolation at step 16 of FR-H.1. The applicant did not complete this step and the isolation signals were received as the plant was depressurized. This eliminated the preferred steam generator (SG) feed source of the main feedwater system when its MSIV closed. The crew also received a second unplanned SI actuation (subsequent to the one mentioned by the applicant) at this point. The anchor associated with a grade of 1 for competency C.4.b (Use procedures correctly), is "Significant errors impeded or slowed recovery or degraded plant unnecessarily." Failure to block the main steam isolation resulted in continued core cooling from RCS feed and bleed instead of transitioning to the preferred method of feeding the steam generators with main feed water. The success path for this scenario was to use a main feed pump to feed the steam generators. This was not achieved because the applicant's error impeded plant recovery and degraded the plant unnecessarily which would warrant a grade of 1 for this competency. The examiners documented that the crew was implementing ES-1.3 when the scenario was terminated. A telephone log also corroborates this observation.

Applicant comment page 15,16
ES-301-1, Competency C.3.c, page 20.
Examiner Grade: 1

Applicant Comment Summary: The applicant was the RO and took manual control of the feedwater pumps to provide adequate feed flow to the SGs. During post-scenario questioning, the examiner asked why she had run the feed pumps with a mismatch. The examiner did not quantify the mismatch to the applicant. The applicant replied correctly that the feedwater pumps are normally run with a mismatch. The applicant was never questioned about the basis for the mismatch or the size of the mismatch while operating the feedwater pumps in automatic. The examiner incorrectly stated the applicant displayed a lack of knowledge. There is no data either by direct observation or direct questioning to support the claimed lack of knowledge. There is no evidence or data to support the consequences proposed by the examiner. The examiner made an incorrect inference of a claimed lack of knowledge associated with operating the feedwater pumps in automatic with a small mismatch. Due to the incorrect inference and the incorrect consequences, the examiner graded the applicant too severely on this item.

NRC Review Conclusion: The examiners both recollected that the applicant was asked why she ran the feedwater pumps in manual with a large mismatch. The applicant did not ask for clarification of this question and her response indicated that she understood the approximately 25-30% mismatch to be normal. The primary basis for the applicant's downgrading for this event was her performance when controlling the feed pumps. The examiners observed the applicant drive feed pump flows in a divergent manner due to repeatedly manipulating the controls without verifying or closely controlling the results on the system. This resulted in stabilizing and running the feed pumps with the large mismatch. The applicant was asked about the mismatch to determine if she had a understanding or reasoning that the examiners were not aware of which would justify her actions. Her reply indicated she did not and her performance was therefore not justified. The anchor associated with a grade of 1 for competency C.3.c, is "Inadequate knowledge of system and component operation resulted in serious mistakes or plant degradation." The applicant's performance and knowledge of the MFW pump operation on this event alone does not warrant a grade of 1. However, this was also one of three observation comments (two other significant comments on ES-303-1 pages 18 and 19) for competency C.3.c, so a grade of 1 for this competency is appropriate.

Applicant comment page 17
ES-301-1, Competency C.2.c, page 15.
Examiner Grade: 2

Applicant Comment Summary: During this scenario, the applicant was the RO. Due to a failure of the steam header pressure instrumentation input to the feedwater pump speed control circuitry, the applicant took feed pumps to manual and began to increase their output to bring SG levels back to program level. Once the feed pumps were somewhat stable, the RO looked at the computer and vocalized that delta P indication was not correct and the crew began scanning the boards. The BOP was the first to recognize the steam header pressure had failed. This is an example of the applicant being graded too severely by the examiner. When a different simulator crew performed this scenario, the SRO directed the crew to check main steam header pressure and check feed header pressure. This crew did not receive a deficiency in this area of their scenario.

NRC Review Conclusion: The basis for examiner's criteria used in the ES-303-1 comment that "within of 30 seconds diagnose that the Main Steam Header Pressure Instrument had failed low" is not known. However, six minutes is more than a reasonable opportunity for the applicant to diagnose the failure when the indications available with the feedwater differential pressure were recognized. The anchor associated with a grade of 2 for competency C.2.c, is "Minor errors or difficulties in diagnosing conditions." This error was of minor consequence, but given the amount of time and the available indications, the examiner correctly concluded a difficulty in diagnosing conditions existed. A grade of 2 is appropriate. The applicant passed competency C.2. This minor downgrade had no bearing in the pass/fail decision.

An applicant is not downgraded if not given a fair opportunity to identify and diagnose a failure on their panel. In the case of the other crew, the identification of the MS header instrument was very quick and some members did not have an adequate opportunity. In the applicant's case, the greater than 6 minute time to diagnose the failure was considered by the examiners to be more than a fair opportunity for the applicant to recognize and diagnose the failure.

Applicant comment page 18
ES-301-1, Competency C.3.c, page 19.
Examiner Grade: 1
ES-301-1, Competency C.5.d, page 29.
Examiner Grade: 1

Applicant Comment Summary: This claim by the applicant references two separate comments by the examiner. The applicant was the RO during a transient situation when rods began moving in once the transient had begun to settle out. The applicant checked the three inputs to rod control and did not see any indication of a change in these parameters to cause rod movement. The applicant placed the rods in manual and looked at the rod motion demand indicator. She informed the SRO that the rod motion indicator showed a positive mismatch possibly due to the feedwater transient, and with the concurrence of the SRO, she placed rods back in auto. There is no mention in the examiner's report about the time frame the rods were not stepping in. This represents a lack of completeness of the report and a lack of including pertinent information. The rods were in manual for a brief time frame. During this time frame, no manual control manipulation associated with the rods was attempted. This is an example of incomplete information and too severe grading by the examiner.

NRC Review Conclusion: Multiple NRC examiners observed that the transient had not settled out as the applicant contended. The action to place rods in manual was taken within the first two minutes of the transient. Placing rods in manual when moving correctly in automatic in response to a transient is inappropriate. Also, the examiner documentation indicates that the applicant reported to the SRO that main turbine load was decreasing and that the "rods are moving out". Simultaneously she placed rods in manual control prior to receiving any direction or concurrence from the SRO. The SRO then directed (not concurred with) the applicant restore rods to automatic. The duration of the time in manual was therefore irrelevant because the applicant was directed to restore them and the downgrade was based on the taking of the

action in the first place. Competency C.3.c entails "Demonstrate, through directives and actions, a thorough understanding of how the plant, systems, and components operate and interact (including set points, interlocks, and automatic actions)". The anchor associated with a grade of 1 for competency C.3.c, is "Inadequate knowledge of system and component operation resulted in serious mistakes or plant degradation." Placing the control rods in manual when the were appropriately responding to a feedwater transient delayed the recovery of the unit from a transient which meets this criteria. This was also indicative of a tendency by the applicant to operate equipment controls without understanding the response of the system. This example was also one of three supporting the grade for competency C.3.c so the overall grade of 1 is appropriate.

The definition for competency C.5.d is "Take manual control of automatic functions when appropriate." The anchor associated with a grade of 1 for competency C.5.d, is "Depended on automatic actions; required prompting to take manual control" In this case the SRO had to prompt the applicant that it was not the appropriate time to take manual control. For this event a grade of 1 is appropriate. This was also one of two examples supporting the grade for competency C.5.d, so the grade of 1 is appropriate.

Applicant comment page 19
ES-301-1, Competency C.5.b, page 25.
Examiner Grade: 1

Applicant Comment Summary: The applicant was the RO and had been relieved of monitoring SG levels by the SRO. Once this part of the scenario was complete, it became the RO's responsibility to maintain level correctly. As soon as the applicant recognized levels were below 22 percent, the applicant began feeding the SG. The examiner stated that the applicant failed to modulate the main feed flow. The procedure directs the operator to throttle feed flow to maintain the SG levels which does not imply that the valves cannot be either full opened or full closed. The examiner states that failing to keep level above 22 percent results in losing the preferred heat sink and undercooling the RCS. The basis for the 22 percent is to provide a cushion or a margin to prevent the actuation of the auxiliary feedwater signal because actuation of this signal could result in potential releases from the ruptured SG. As a result of incomplete information documented by the examiner and inaccurate consequences stated by the examiner, the applicant was graded too severely.

NRC Review Conclusion: The examiners based the comments on the period when the applicant was responsible for maintaining SG level. The examiners noted that the applicant had not manipulated the controls in an accurate manner and had set up an oscillation pattern between both ends of the level band. The applicant had been directed by the SRO to maintain SG level in the upper part of the band. The applicant controlled flow by taking the auxiliary feedwater valves either full open or full closed. The applicant is correct that this alone is not an improper action. However, the intent is to control SG levels which cycled between 22% and 50%. This could represent a minor shortcoming. The consequences presented by the applicant (e.g. potential releases from the ruptured S/G) would represent equally significant perturbations rendering the accuracy of the examiner's proposed consequences irrelevant.

Regardless, the expected performance was to maintain level with in the upper part of the band in a controlled manner. The anchor associated with a grade of 1 for competency C.5.b is "Improper manipulations caused major system perturbations" while the anchor for a grade of 2 is "Minor shortcomings, but any resulting consequences were readily mitigated." This event alone would warrant a grade of 2. However, since this was also one of four examples supporting the grade for competency C.5.b, the overall grade of 1 is appropriate.

Applicant comment page 20
ES-301-1, Competency C.3.a, page 16
Examiner Grade: 2

Applicant Comment Summary: The applicant was the BOP. During the load increase, the applicant chose to take manual control of charging. The applicant discussed this with the SRO and with his concurrence, she manually controlled charging. The applicant's actions are allowed in accordance with licensee guidelines. The actions taken are common actions taken by Operators during a load increase to better control level swings. The applicant did not negatively affect the operation of the NV system. A different applicant acting as BOP performed the same actions as this applicant and he was not penalized on his grading for this action. There is no data or information to support the claim of lack of knowledge associated with evaluating plant conditions and making operational judgements. The applicant maintained positive control over the component and operated the system with in the design basis. There is an issue of inconsistency between the grading of the two applicants by different examiners, and this applicant was graded too severely.

NRC Review Conclusion: Multiple examiners observed the applicant simultaneously inform the SRO and take manual control of charging flow and pressurizer level. Concurrence of the SRO was not obtained and he was unaware if any problem existed. A need to take manual control of charging did not exist. As documented on ES-303-1, the applicant frequently took manual control in response to momentary seal flow alarms which would clear when seal flow alone was adjusted. However the applicant took charging flow and pressurizer level control to manual unnecessarily. The anchor associated with a grade of 2 for competency C.3.a is: "Minor errors in interpreting instruments and displays." Although there is no prohibition on taking controls to manual, frequently taking the controls to manual when it was not necessary would be a valid example of a minor error in interpreting instruments and displays. The assigned grade of 2 for this competency is appropriate. The examiners noted that other applicants generally took only the reactor coolant pump seal control to manual (not the entire charging system) which was a more appropriate action.

Applicant comment page 21
ES-301-1, Competency C.3.b, page 17
Examiner Grade: 2

Applicant Comment Summary: The applicant in the BOP position was adding Boron to the NC system to control NC system temperature. At no time during the performance at the BOP

position did the applicant allow Regenerative Heat Exchanger Letdown Temperature to reach a point where there would be steam flashing in the letdown line. At normal letdown pressure, flashing would occur at approximately 432 degrees. Upon receiving the high temperature alarm which actuated one time at 395 degrees, the applicant took action per the Annunciator Response Procedure. At no time were the consequences suggested by the examiner experienced. The applicant noted that a lack of knowledge was inferred by the examiners from this evolution because no follow-up questions were asked. The conclusions stated by the examiner caused him to unnecessarily grade the applicant in a severe manner.

NRC Review Conclusion: The examiner did not imply that flashing or any major system perturbation had occurred. However, a failure to properly monitor and anticipate changes in order to properly control the parameter within the required limits could result in such a condition. The anchor associated with a grade of 2 for competency C.3.b is "Sporadically scanned indications; minor lapses in anticipating predictable changes" This example would qualify as a minor lapse in anticipating predictable changes so the grade of 2 is appropriate. The downgrade is based on performance and ability. As noted earlier in another example, although the ES-303-1 heading for this item was lack of knowledge, it should have been lack of ability. The text of the examiner's comment appropriately addresses lack of ability.

Applicant comment page 22
ES-301-1, Competency C.3.c, page 18
Examiner Grade: 1

Applicant Comment Summary: During this scenario, the applicant was the BOP. During post scenario questioning, the examiner asked the applicant what Channel 2 of pressurizer pressure controls. The applicant answered by stating that channel 2 controls the opening of power operated relief valves (PORVs) NC32 and NC36. The examiner never asked the applicant to explain the difference between the control functions associated with the different positions on the selector switch. As the applicant was explaining her actions to the examiner, she did explain to him, that by mispositioning the switch, she had placed the failed channel in service as the backup channel. The questions asked by the examiner were confusing and the applicant asked several times for clarification of the exact question. The examiner drew an incorrect inference regarding applicant's knowledge. The applicant, by explaining her actions to the examiner, did explain the result of the mis-position which essentially explains the functions associated with positions on the switch. As a result of the incorrect inference by the examiner, the applicant was graded too severely.

NRC Review Conclusion: The basis for the downgrade in this competency was the applicant's incorrect performance. A pre-defined critical task was to place the pressurizer pressure control switch to position 1-4 to remove the failed channel from service. The applicant did not do so and selected channel 3-2,leaving the failed channel 2 in service and the PORV open. Competency C.3.c entails "Demonstrate, through directives and actions, a thorough understanding of how the plant, systems, and components operate and interact (including set points, interlocks, and automatic actions)." The anchor associated with a grade of 1 for competency C.3.c is "Inadequate knowledge of system and component operation resulted in

serious mistakes or plant degradation." Although the applicant recognized her error after it was identified by the RO and verbalized it during follow-up questioning, the knowledge was not present during the performance of the scenario and manifested itself in a lack of ability to take the appropriate action. This is relevant to this competency and is the basis for the grade. The applicant's error in selecting the wrong control switch position did result in a plant degradation (loss of reactor coolant pressure) and a score of 1 would be appropriate.

Applicant comment page 23
ES-301-1, Competency C.5.c, page 27
Examiner Grade: 2

Applicant Comment Summary: The applicant was the BOP and took control of charging as a result of the load increase to maintain positive control over charging. The applicant did not take control of charging based on any perception on her part that there had been a failure of a controller to respond in automatic. The SRO concurred with the applicant's actions. The applicant operated the system correctly and there is no documentation to support a lack of ability. The applicant was inappropriately penalized for this action.

NRC Review Conclusion: As described above in the reply to the applicant's comments (appeal page 20 for C.3.a.), multiple examiners observed the applicant simultaneously inform the SRO and take manual control of charging. Concurrence of the SRO was not obtained. The applicant frequently took manual control in response to momentary seal flow alarms which would clear when seal flow alone was adjusted. The examiners also noted that the applicant elected to maintain manual control even after the alarm condition had cleared. The anchor associated with a grade of 2 for Competency C.5.c (Act appropriately in response to instrument readings) is "Generally responsive but some minor errors and lapses without assistance." The frequent taking of manual control and maintaining it when not necessary would constitute a minor error in response to the seal pressure instrument readings. The assigned grade of 2 for this competency is appropriate.

Applicant comment page 24
ES-301-1, Competency C.5.b, page 26
Examiner Grade: 1

Applicant Comment Summary: At no time during the performance at the BOP position did the applicant allow Regenerative Heat Exchanger Letdown Temperature to reach a point where there would be steam flashing in the letdown line. There is a claimed lack of ability that the applicant failed to manipulate the controls in an accurate and timely manner resulting in a major system perturbations resulting in operating parameters deviating outside design specifications. There is no data to indicate any major system perturbations occurred. On the contrary, the prompt action by the applicant in response to the alarm quickly restored the system. In conclusion, this is an example of inaccurate consequences drawn by the examiner and of the applicant being graded in a severe manner.

NRC Review Conclusion: As described above in the reply to the applicant's appeal comments on page 21 for C.3.b, the examiner did not imply that flashing or any major system perturbation had occurred. Failure to properly control the parameter within the required limits could result in such a condition. Competency C.5.b requires applicants to "Manipulate controls in an accurate

and timely manner." The anchor associated with a grade of 1 for competency C.5.b is: "Improper manipulations caused major system perturbations." The applicant did demonstrate problems manipulating controls that resulted in the letdown temperature alarm. This comment alone would not support a grade of 1. However, this was also one of four examples supporting the grade for competency C.5.b, so the overall grade of 1 for C.5.b based on these examples is appropriate.

Summary of Applicant's Performance:

The original license denial was based on unsatisfactory performance on 3 Category B systems tested by JPMs and the overall Category C Simulator Operating Test. The review concluded that the Category B system grades are unchanged. The applicant failed three systems and did not achieve an 'S' on at least 80 percent of the systems examined. The applicant therefore fails Category B. The technical review concluded that the grade of 2 for Competency C.7.a was inappropriate and changed the grade from 2 to 3. This did not alter the failing grades (below 1.8) assigned for Competencies C.3, C.4, and C.5. The applicant therefore fails Category C.

Operating Test Regrading Summary

a. Administrative Topics	**S**
b. Control Room Systems and Facility Walk-Through	**U**
c. Integrated Plant Operations (Simulator Operating Test)	**U**

Category	Evaluation (S or U)	Comment Page Number
B.1. Control Room Systems		
a. Align Containment Spray to Cold Leg Recirc	**S**	
b. Respond to RHR System Malfunction at Mid Loop	**S***	**5,6**
c. Depressurize RCS During Natural Circulation	**U**	**7-9**
d. Respond to Failure of SR NI's	**S**	
e. Re-synchronize the Generator to the Grid After Full Load Rejection	**S**	
f. Calculate Potentiometer Setting and Makeup to RCS	**U**	**10-12**
g. Terminate SI (Unit 2)	**S***	**13**
B.2 Facility Walk-Through		
a. Ensure Proper Response of Diesel VI Compressors During Loss of Instrument Air	**S**	
b. Transfer ETA to Normal Power Supply and S/D EDG	**U**	**14**
c. Emergency Borate RCS Locally (Unit 2)	**S**	

C. Senior Reactor Operator Integrated Plant Operations (Simulator Operating Test) Grading Summary						
Competencies/ Rating Factors	Weight	3.0	2.0	1.0	Total	Comment Page No.
1. Alarms/Annunciators						
a. Prioritize	0.30	**0.90**	0.60	0.30		
b. Interpret	0.35	**1.05**	0.70	0.35		
c. Verify	0.35	**1.05**	0.70	0.35	**3.0**	
2. Diagnosis						
a. Recognize	0.25	**0.75**	0.50	0.25		
b. Accuracy	0.25	**0.75**	0.50	0.25		
c. Diagnose	0.25	0.75	**0.50**	0.25		**15**
d. Crew Response	0.25	**0.75**	0.50	0.25	**2.75**	
3. System Response						
a. Interpret	0.35	1.05	**0.70**	0.35		**16**
b. Attentive	0.20	0.60	**0.40**	0.20		**17**
c. Plant Effects	0.45	1.35	0.90	**0.45**	**1.55**	**18-20**
4. Procedures						
a. Reference	0.25	**0.75**	0.50	0.25		
b. Correct Use	0.50	1.50	1.00	**0.50**		**21**
c. Crew Implementation	0.25	0.75	**0.50**	0.25	**1.75**	**22**
5. Control Board Operations						
a. Locate	0.25	**0.75**	0.50	0.25		
b. Manipulate	0.25	0.75	0.50	**0.25**		**23-26**
c. Response	0.25	0.75	**0.50**	0.25		**27**
d. Manual Control	0.25	0.75	0.50	**0.25**	**1.75**	**28,29**
6. Communications						
a. Clarity	0.45	**1.35**	0.90	0.45		
b. Crew Informed	0.35	**1.05**	0.70	0.35		
c. Receive Information	0.20	**0.60**	0.40	0.20	**3.0**	
7. Directing Operations						
a. Timely Action	0.20	**0.60**	0.40	0.20		
b. Safe Directions	0.40	**1.20**	0.80	0.40		
c. Oversight	0.20	**0.60**	0.40	0.20		
d. Crew Feedback	0.20	**0.60**	0.40	0.20	**3.0**	

8. Technical Specifications a. Recognize b. Locate c. Compliance	 0.40 0.20 0.40	 **1.20** 0.60 **1.20**	 0.80 **0.40** 0.80	 0.40 0.20 0.40	 **2.8**	 **31**