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July 24, 1989

Mr. Robert Gallo
Operation Branch Chief
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Subject: Operator Regualification Examinations R.E. Ginna
Nuclear Power Plant
Docket No. 50-244

Dear Mr. Gallo:

As required by NUREG 1021 (ES 601 Section D.3.C.2.(a)), enclosed you will find the final RG&E grades and results for the NRC license regualification examination administered during the week of June 19, 1989. Based on a review of these results, the Ginna Operator Regualification Program is undertaking a number of corrective actions which are described in the attached report.

Very truly yours,

Robert C. Mecredy
General Manager
Nuclear Production

Att: P. Bissett, Chief Examiner



ATTACHMENT I

R.E. GINNA EXAM SUMMARY

I. OVERVIEW

The following narrative will detail the observations, root causes, and conclusions which have been drawn concerning the NRC regualification examination administered during the week of July 19.

Each section of the examination was looked at with attention being given to: the reasons for the failure, what corrective action would be needed to conduct remediation of the failures, and which actions are needed to strengthen the Operator Regualification Program. In most cases, the remediation of individuals will require implementation of programs or courses within the capabilities of RG&E's Nuclear Training Department. In those areas which are outside of RG&E's capabilities, a nationally recognized consultant has been contracted to conduct specialized remediation training for two individuals.

II. OPERATIONAL EXAM

A. Results: The overall results of the Simulator Operational Exam have been tabulated by crew, individual, and scenario, on Figure A.



B. INDIVIDUAL FAILURES

1. [REDACTED]

Observations: [REDACTED] was identified as failing to complete the Control Operator Individual Simulator Critical Task (ISCT) identified in Scenario 89-7. During this event, he was required to manually restart the "A" Auxiliary Feedwater Pump (AFWP) which failed to auto start on a valid Safety Injection (SI) signal. Although [REDACTED] attempted to start the pump several times by taking the switch to start, he failed to reset the switch by going to the after trip switch position. By not going to the after trip position first, the start circuit for the "A" AFWP was never reset and therefore could not start.

Additionally, as Control Operator, he was charged with controlling auxiliary feed to the non-faulted steam generator. The lower pressure in the faulted "B" steam generator (S/G) diverted all auxiliary feedwater being delivered by the Turbine Driven Auxiliary Feedwater Pump (TDAFWP) to the faulted S/G. [REDACTED] appeared to be confused as to whether the plant was responding as expected or if there was a serious problem with the Aux feed system. It wasn't until he was directed to manually throttle the TDAFWP discharge



valves that he identified the plant was responding normally. It was the consensus of the RG&E evaluation that [REDACTED] failed to perform the identified ISCT.

Results: [REDACTED] was identified as an individual simulator failure and removed from licensed duties.

Reason for Failure: Initially it was believed that [REDACTED] did not know how to reset a Main Control Board W-2 switch. A subsequent scenario required that both a Service Water Pump and Safety Injection Pump be manually reset and started. Mr. [REDACTED] in the position of Head Control Operator, performed both starts correctly. The initial concern relating to switch reset operation was eliminated by his correct performance. The concern about his operation of the auxiliary feed system remained.

Subsequent interviews with the candidate substantiated the observations of RG&E evaluators. The cause was identified to be lack of practical experience as Control Operator rather than lack of knowledge. [REDACTED] has a very strong knowledge level of the plant and procedures as evidenced by

his previous exam scores and the written score (96.42%) from this exam.

A Ginna Staff Crew consists of four to five SRO's who train on the simulator as a shift. Throughout the training week, each SRO rotates through the various Control Room positions for practice. Due to the requirement for certain annual and biennial manipulations and the limited simulator time per shift (~84 hours), each individual does not see every event while in each position. Therefore, [REDACTED] may not have received as much practical experience on the Aux feed system as he needed. Additionally, Mr.

[REDACTED] unlike the other members of his shift, did not work as either a control room operator or as a simulator instructor prior to his present position.

The combination of the limited practical simulator experience in this position and the lack of operational experience to fall back on during the stressful NRC exam are considered the major causes for [REDACTED] failure.

Remediation: Considering that [REDACTED] failed both practical sections of the exam, remediation would require extensive simulator and JPM training

to ensure that the required practical skills are strengthened to the point where they are of a routine nature to him. Also, management has conducted a license review and finds [REDACTED] present duties do not require him to maintain a license. As a result, there are no plans to conduct remediation training, instead, RG&E will request that [REDACTED] license be dropped.

2. [REDACTED]

Observations: [REDACTED] was identified as failing Scenario 89-7 (Steam break) in that he did not perform the identified Control Room Foreman (CRF) ISCT. This ISCT required that all transitions to subsequent procedures be identified and carried out correctly.

During this scenario, step 15 of procedure E-1 (Loss of Reactor or Secondary Coolant) was improperly interpreted by [REDACTED]. After checking Steam Generator pressures stable or increasing (reported stable by the RO) he should have looped back to step 1 of E-1 rather than proceeding to step 16. The basis of step 15 deals with the steam break accident rather the loss of reactor coolant. The intent is that the operator loop through steps 1 through 15 until such time as



96.

the faulted S/G has blown completely down and SI termination criteria is met. This criteria can be identified via step 11 of the procedure or the foldout page.

For this scenario, the [REDACTED] did not implement the step correctly and, therefore, proceeded on to step 18b where he was kicked out to ES-1.2 (Post Loca Cooldown and Depressurization), rather than ES-1.1 (SI Termination). Even though the shift was well aware that they had a steam break inside containment, the [REDACTED] announced that he was going to ES-1.2 and then implemented the procedure.

It was the consensus of the RG&E evaluators that the [REDACTED] had missed the ISCT and, because of his announcement, it was felt that he was just following the procedure rather than managing the event.

Results: [REDACTED] was removed from Licensed Duties and placed in a remediation program.

Reason for Failure: This particular step had been identified as a stumbling block by the Training Department. Classroom and Simulator training over the last few years has emphasized the intent of



this step and correct implementation of this step was observed. Operations was notified of the problem and the new revision of this procedure has better wording and detail to ensure the correct path is taken.

Despite what were felt to be adequate measures, no formal defined guidance was ever given to the operators. As a result, rather than having a step that was clearly worded to ensure that a correct transition was made during times of high stress; the step could only be implemented correctly if the operator recalled the basis. It is important to note that the Westinghouse Emergency Response Guideline Background documents state; "If the operator proceeds past step 15 of E-1 with a depressurizing SG, he could be directed to ES 1.2 POST LOCA COOLDOWN AND DEPRESSURIZATION, and encounter more restrictive SI Termination criteria than necessary". Prior discussions between RG&E and Westinghouse regarding this issue also indicated that although there was some meaningful differences between the paths, none have safety significance.

Remediation: The program for [REDACTED] consists of a combination of simulator class, simulator observation, classroom, and individual self study.



Actual details and scheduled completion dates are shown on Figure D. All training will be conducted using the newest revision to the Ginna Emergency Operation Procedures.

Each simulator session reinforces the use of the new communication standard implemented by operations as well as the importance of team work. Every session is being video taped to allow the student to conduct an individual critique as well as one with his crew members.

A comprehensive simulator examination is scheduled to be administered after the first 20 hours of simulator class. This exam will consist of scenarios which meet the requirements of ES-601. Following the evaluation, an additional eight hours of simulator training has been scheduled to correct any remaining deficiencies.

3. [REDACTED]

Observations: [REDACTED] was identified as an individual failure for failing to perform the Head Control Operator immediate actions of FR-S.1 (ATWS/Restart) in a timely manner during scenario 89-9 (ATWS). The procedure basis assumes that operator action is initiated immediately to ensure that the reactor is shut down. During the scenario



it was evident by his response that he would not have manually driven the control rods in if the Control Operator had not prompted him.

Although [REDACTED] did start an immediate boration, the reactor operated for an unnecessary period of time with only the steam dump system and the S/G safety valves as a heat sink. Failure to initiate this immediate action challenged core safety.

Contributing factors to the failure were the HCO's failure to recognize that many of his control and indication problems could have been eliminated by restoring Instrument Bus D. It was the consensus of the RG&E evaluators that these specific observations warranted an individual failure.

Results: [REDACTED] was immediately removed from Licensed duties and placed in a remediation program.

Reason for Failure: A review of the training records indicates that this procedure was taught in detail during the 1987 requal cycle. This class consisted of classroom training, and a simulator demonstration of the event both with and



1066

without operator action. This procedure is also included as a part of the annual simulator training for every crew. [REDACTED] performance in this area has always been satisfactory.

During an interview with [REDACTED] he stated that he was nervous and thrown off guard when the Bus 13 breaker would not open and thus mitigate the ATWS. He stated that he did not recall the step to drive control rods in manual as it was the last action in a wordy RNO step.

Remediation: [REDACTED] is participating in the same simulator remediation program as [REDACTED]

[REDACTED] (Figure D).

4. [REDACTED]

Observation: [REDACTED] was also identified as a failure due to improperly initiating the Control Operator's Immediate actions of FR-S.1 during scenario 89-9 (ATWS). As described above, this procedure assumes that operator action takes place within 90 seconds to prevent challenging RCS integrity. Once it was recognized that the Bus 13 Lo side breaker would not open, [REDACTED] should have continued with his immediate actions. Instead, he continued to try and trip Bus 13 and



as a result he never verified Aux Feed Pumps running, nor did he restore power to the required MCC's.

Not verifying Aux Feed had no consequence as the pumps did start. Failing to restore power; however, led to an unnecessary loss of instrumentation control and indication. The loss of instrumentation made stabilizing the plant more difficult than normal, as there was no source range nuclear instrumentation available nor was there any indication available for letdown.

It was the consensus of the RG&E evaluators that [REDACTED] actions contributed significantly to the mismanagement of this scenario and therefore warranted an individual failure.

Results: [REDACTED] was identified as an individual simulator failure and removed from licensed duties.

Reason for Failure: As in [REDACTED] case, the ATWS event has been part of the Ginna Training Program. [REDACTED] has had an ATWS scenario as an RO in both requal and initial license class and has performed satisfactorily in the past.

During an interview with [REDACTED] after the



exam, he stated that he had never seen that particular scenario before. He admitted that he forgot to perform all of the Immediate Actions but only because he was trying to deal with the failure of Bus 13 to trip.

Remediation: [REDACTED] is participating in the remediation program as [REDACTED]
[REDACTED].

5. [REDACTED]

Observation: [REDACTED] was identified as an individual failure for failing to adequately manage the implementation of procedure FR-S1 during scenario 89-9. As CRF, [REDACTED] hesitated in implementing the procedure and did not adequately ensure that all Immediate Actions were carried out. Failure to follow the E Procedure users guide resulted in missing the RNO steps which both board operators had missed. As a result, two Immediate Action steps were never completed.

Throughout the event, the CRF did not give adequate guidance on how to compensate for or correct the loss of instrument bus, never identified the cause of the loss of source range indication, or conduct a methodical investigation of the



indicated pressurizer steam space break. Overall, the RG&E evaluators agreed that Mr. Alder did not demonstrate the necessary leadership and diagnostic skills which he has exhibited in the past and therefore warranted a failure.

Results: [REDACTED] was identified as an individual failure and removed from licensed duties.

Reason for Failure: Due to events which have occurred subsequent to the exam, the cause for failure has been undetermined pending the results of management initiatives.

Remediation: A tentative plan for remediation of [REDACTED] is included as Figure E. Actual plans; however, are undetermined at this time.

C. CREW FAILURES

1. E SHIFT

Observation: The E shift was identified as a crew failure as a result of the inability to correctly implement and complete FRS.1 in a timely and correct manner during scenario 89-9. Failure to complete immediate actions by the board operators coupled with lack of direction from the CRF



resulted in a challenge to core safety.

Throughout the event, many of the problems encountered were due to operator errors. Once the crew missed restoring power to the Instrument Bus, recovery from the event became increasingly difficult. Restoration of Letdown occurred without any Main Control Board indication available to verify proper operation. Also, the crew failed to recognize that the loss of source range indication was due to the deenergized Instrument Bus and as a result they never obtained indication.

Throughout the scenario, the crew exhibited a definite lack of teamwork, poor communication practices, poor diagnostic and problem solving skills, and a definite lack of leadership. Despite the fact that these problems were not evident during the second scenario, all RG&E evaluators agreed that these factors warranted a crew failure.

Results: All members of this crew were removed from licensed duties.

Reasons for Failure: Interviews with the available members of the shift indicate that they only had twelve hours of simulator training with the CRF

since his return to shift. They felt that they had not become familiar with his style and that was a significant problem. They also stated that the stress of waiting for the scenarios affected their performance.

After reviewing the video tapes with available crew members, it was apparent that actions were simply forgotten. The CRF's improper use of the procedure and inaccessibility of the SS and STA were significant contributors to the failure.

As mentioned previously, the artificially imposed constraints placed on the Shift Supervisor and STA compounded the event. Interviews with the STA after the scenario indicated that he knew exactly what had to be done but felt that by speaking up he would be prompting the crew. After discussions with Region I, the STA, Communicator and SS are now active players in all operator requal evaluation scenarios.

Remediation: The crew is being remediated in accordance with the plan presented in Figure D. Special emphasis is being placed on communication skills, immediate actions, and teamwork. Each simulator session is being video taped to allow the shift to the ability critique themselves and



monitor their own progress.

III. JOB PERFORMANCE MEASURES

A. Results: The individual results of each JPM are tabulated by JPM question number and candidate in Figures C-1 through C-10.

B. Failures

1. [REDACTED]

Reason for Failure: The three JPM's which [REDACTED] failed were dependent on a strong operational background. As JPM's were not required at the time of [REDACTED] original license application, these tasks were not part of the training program at the time. JPM training is now part of the requalification program, but not all JPM's had been formally trained on at the time of the exam.

Remediation: As explained before, management review indicates that [REDACTED] does not need a license for his present position and therefore his license will be dropped.

2. [REDACTED]

Reason for Failure: [REDACTED] failed the following



Page 2

JPM's for the reasons listed:

- a. J001.001 PT1 (Rod Exercises): During the rod exercise, [REDACTED] was not observed monitoring Tavg, nor did he indicate that he monitored Tavg. This was a direct violation of one of the precautions of the PT.
- b. J015.002 Remove N41 From Service:
[REDACTED] did not remove N41 from Plant Process Computer Scan in the correct manner. Failure to do so rendered a tech spec alarm inoperable.
- c. J061.003 Reset TDAFW: [REDACTED] did not identify the correct reset latch per the procedure. As a result, the TDAFW pump would not have been restored to service after he said he was done.

Remediation: Unknown at this time.

IV. WRITTEN EXAM

- A. The overall results of the Written Exam have been tabulated by section and candidate on Figure B. [REDACTED]
[REDACTED] will be taking his exam with the individuals who are presently in remediation.



810

- B. **Exam Review:** Following the grading of the written exam, the exam was reviewed by RG&E's Training Systems Group. This group consists of Instructional Technologists and Training Specialists who conducted an item analysis on the exam per accepted INPO methodology.

The results of this analysis (Figure F) indicate that "the two failures are most probably individual cases and not the gross results of training or the examination." The analysis also identified three questions which were missed by more than 50% of the candidates. These questions were SS11.2, SS11.11 and SS11.8.

Although the percentage of candidates performing poorly on these questions was high, the variety of incorrect responses makes it difficult to identify a root cause. Question SS13.008 is more in that 6 out of 11 people failed to recognize that TI409A failed. This can either be attributed to poor use of the Main Control Board as an open reference or misinterpretation of the question.

- C. **Remediation:** The Training Department reviewed the entire exam with each identified failure. An instructor went over each question with the individual to assess their knowledge level and the individual's exam taking style. At the conclusion of the review and interview,

the instructor indicated that each possessed a satisfactory level of knowledge but there were some indications that exam taking skills needed to be strengthened. (See Figures H & I)

As a result, both [REDACTED] are being sent to the Learning Development Center at the Rochester Institute of Technology. The Learning Development Center is a nationally known center that works with individuals who need assistance in developing examination strategies. Test anxiety, pacing, interpreting questions, and writing concise answers are all addressed by the Center.

It is hoped that this training will assist both individuals when they retake the exam. During their training, they will be taking a practice exam under strict time limits to determine if their new techniques are working.

V. PROGRAM EVALUATION

A. WEAKNESSES:

1. Communication: Lack of a formal communication standard was a major contributing factor for the poor communication practices demonstrated during the operational simulator exams. Although the heightened stress level of the exam environment

was also a factor, lack of a standardized communications policy to fall back on during this time may have adversely affected the scenario's outcome.

In the past, the communication emphasized during a simulator session varied according to each simulator instructor's interpretation of what good communication consisted of and what it should sound like. Lacking a formal operation's standard, the communication objectives set for each simulator scenario were completed to varying degrees. The end result was that, as displayed on the exam, communication was often inconsistent and, more importantly, incomplete.

The communication which was observed by the Operations Manager during this last exam served as a catalyst for implementing the formal operations, communication standard shortly after the exam. This new standard clearly identifies what management expects in regard to control room communication and gives the Training Department a clear standard which must be met.

Implementation over the last two weeks has met with the standard resistance to any change, but with consistent application, the operators have commented on the benefits. Some of these have been:



increased awareness by all members of the crew of plant status in management of an event, negligible errors in implementing complex procedural steps, and increased confidence due to better performance. With consistent application of this standard in the control room and the simulator, communication between members of the control room teams have already improved and can only get better.

2. Job Performance Measures: Even though Job Performance Measures (JPM's) were included as part of this year's training, the number of individuals who failed one or more JPM's indicates that more attention must be placed in this area.

The seventy-five JPM's submitted for this exam were developed from those tasks identified by the curriculum committee as having the proper K/A safety factor and requiring training. The JPM list was made available to all operators but only ten percent of these have been covered thus far in the requal program.

In order to ensure that all licensed operators are promptly trained on each JPM, several schedule and curriculum changes will be implemented. The intent of these changes is to develop a reasonable schedule that allows each operator the opportunity



to practice evolutions which he may not do on a regular basis.

3. Individual Simulator Critical Tasks (ISCT): This area of the exam must be revisited by the Ginna Training Department. Although ES 601 appears to give very clear guidance as to what an ISCT should be; application of the concept proved difficult.

In hindsight, a few of the ISCT's identified did not meet all of the ES 601 requirements. They were; however, the ones agreed to by the exam team members and were therefore adhered to. In future exams, Training will ensure that the guidance of ES 601 is closely followed.

4. Electrical Sciences: Assessment of the JPM questions regarding the Emergency Diesel Generator indicates that there may be a generic weakness in this area. A Training Change Request (TCR) has been submitted to upgrade the Electrical Science Course to ensure that the trouble areas are addressed this year.
5. Simulator Objectives: As a result of a recent revision to the evaluation criteria of ES-601, Ginna generic simulator objectives were changed to mirror this change. In doing so, the elements



required to meet each enabling objective were deleted. Without the specific elements being identified, the simulator student lacked clear guidance as to how he was to meet the objective. A request will be submitted to revise the lesson plan such that it will include all elements for each objective. This will help each student clearly identify what is expected of him during operation of the plant.

6. Shift Supervision Role: During this exam there was a misinterpretation regarding the degree of active involvement of the Shift Supervisor, communicator, and Shift Technical Advisor. With further Region I clarification, the Ginna Simulator Training has been changed to reflect a policy of active involvement by all shift members.

In addition, the Operations Manager has formalized what the Shift Supervisor should do during an event by way of a memorandum (Figure G). This memo requires the Shift Supervisor to maintain a global assessment of an event and conduct periodic briefings with the shift members to ensure that they are all cognizant of plant status.

This new standard will also give the Training



department further guidance of how Shift Supervisors should be trained and evaluated.

7. Plant Process Computer System (PPCS) Training: Observations by the RG&E evaluators during the performance of the JPM's and simulator exams indicate that the SRO's were weak in the operation of the PPCS. Tasks such as trending a point or deleting monitored Power Range points during a channel isolation were often performed incorrectly. A TCR has been submitted to develop a self-paced programmed course to give those candidates, identified as weak, a structured course to improve proficiency.

8. Emergency Procedures: Lack of an aggressive plan to ensure that performance problems attributed to procedural problems were followed up in a timely fashion. Training had identified a number of procedural pitfalls which could prevent an operator from successfully completing various procedures.

In the past, training taught around these pitfalls by identifying them to the students, explaining what was in error, how to accomplish the step, and what the new procedural change should be. As evidenced by Mr. Beldue's error,



100

training is a good foundation but it is not the best repair for procedural problems. Steps taken to mitigate potential problems in the future include: inclusion of the Supervisor-License Training and Supervisor-Simulator Training as full members of the Emergency Procedure Committee, and direct input from the requal simulator and classroom crews to the Emergency procedure coordinator regarding procedure problems incurred during training. Increased cooperation between operations and training can only give the control room operators better tools with which to work with.

B. Strengths

1. Exam Validation - The fact that all sections of the exam were completed within the scheduled time reflects well on the effort put into constructing the exam. All portions of the exam were validated and verified using job incumbents throughout the development process. Careful controls were followed to ensure that the exam materials were not compromised while obtaining meaningful feedback from the incumbents.

The result of the combined operations and training effort was a bank of exam materials which had the proper cognitive level, safety significance,



and time validation required by ES 601. Exam questions were modeled after the example questions in Attachment 14 of ES 601. Special care was taken to ensure that the exam material followed the guidance of Attachment 14 (section II.1.B and section II.2.F) of ES 601.

2. Training Staff: The ability of the RG&E training staff to conduct comprehensive and objective evaluations of the Licensed Operators was definitely demonstrated during this exam. Comments made by the NRC Chief Examiner regarding the demeanor, professionalism, and thoroughness of the staff underscores this ability.

The Licensed Instructor staff consists of former licensed operators (6/10) and a mix of degreed and non degreed individuals (5/10 have Bachelor's or Advanced). Two of the instructors not currently degreed are attending the company sponsored degree program to obtain their Bachelors. This mix gives the staff a strong operational and technical foundation to conduct the accredited training program.

The strong background is also an asset when conducting observations and evaluations of the licensed operators. The excellent rapport between



operations and training allows feedback from both groups to be free flowing. The free flow of information and ideas between members of the NRC exam team (comprised of RG&E and NRC personnel) also highlighted the excellent rapport the Ginna Staff has with the Region I examiners. Recognizing that there will always be professional differences regarding ES 601, the team worked well together in producing a fair exam. RG&E will continue to work with the NRC, NUMARC, and MANTG to smooth out those areas of ES 601 which still seem to be a little rough.

3. Reference Materials: A number of RG&E exam questions were rejected because the NRC examiners felt that they were direct look ups. One of the comments made by an NRC examiner regarding the JPM questions is that Ginna should not be penalized for having good procedures. Extra care has been taken to remove ambiguity from the decision making process of the Control Room team by providing the team with detailed alarm response cards and procedures. As discussed in the Ginna SRO Supervisory Skills course, decisions should be made based on the information available, and if this information is properly used, decisions will be



easy to make.

Close attention is given to simulator performance problems due to reference material inadequacies. Recent examples of materials developed or being developed are the Instrument Failure Reference Manual and the EOP flow path diagrams. Both of these tools incapsulate large volumes of information in a concise format which helps the operators manage events. RG&E will continue to develop and improve reference material to provide operations with the best tools possible for safe, efficient operation.



FIGURE A

R.E. GINNA

SIMULATOR SUMMARY SHEET

CREW	CANDIDATES	89-7 STEAM BREAK		89-9 ATWS		89-4 TUBE RUPTURE		89-15 FEED BREAK	
		POSITION	PASS/FAIL	POSITION	PASS/FAIL	POSITION	PASS/FAIL	POSITION	PASS/FAIL
A	P [REDACTED]	SS	P	CRF	P				
		CRF	P	SS	P				
		HOO	P	OO	P				
		OO	P	HOO	P				
E	F [REDACTED]	CRF	F	SS	P				
		SS	P	CRF	F				
		OO	P	HOO	F				
		HOO	P	OO	F				
4	P [REDACTED]	SS	P	OO	P	CRF	P	HOO	P
		OO	F	SS	P	HOO	P	CRF	P
		HOO	P	CRF	P	OO	P	SS	P
		CRF	P	HOO	P	SS	P	OO	P



FIGURE B

**R. E. GINNA STATION
WRITTEN EXAM SUMMARY SHEET**

CANDIDATE	PART A-1		PART A-2		SECTION A	PART B		SECTION B	WRITTEN POINT		OVERALL
	TOTAL	ACHIEVED	TOTAL	ACHIEVED	GRADE	TOTAL	ACHIEVED	GRADE	TOTAL	ACHIEVED	GRADE
[REDACTED]	9.00	8.00	13.00	11.00	86.30	20.00	17.50	87.50	42.00	36.50	86.90
[REDACTED]	9.00	5.25	13.00	6.25	52.30	20.00	13.90	69.50	42.00	25.40	60.47
[REDACTED]	9.00	8.25	13.00	10.75	86.30	20.00	18.50	92.50	42.00	37.50	89.28
[REDACTED]	9.00	5.25	13.00	12.00	78.40	20.00	19.70	98.50	42.00	36.95	87.97
[REDACTED]	9.00	7.50	13.00	13.00	93.20	20.00	20.00	100	42.00	40.50	96.42
[REDACTED]											
[REDACTED]	9.00	8.00	13.00	9.75	80.70	20.00	18.00	90.00	42.00	35.75	85.12
[REDACTED]	9.00	8.25	13.00	13.00	97.72	20.00	17.00	85.00	42.00	38.25	91.07
[REDACTED]	9.00	9.00	13.00	12.00	95.45	20.00	20.00	100	42.00	41.00	97.62
[REDACTED]	9.00	6.75	13.00	10.00	76.13	20.00	15.50	77.50	42.00	32.25	76.78
[REDACTED]	9.00	8.40	13.00	11.00	88.10	20.00	19.00	95.00	42.00	38.40	91.42
[REDACTED]	9.00	8.25	13.00	11.00	87.50	20.00	20.00	100	42.00	39.25	93.45

*DID NOT TAKE WRITTEN EXAM AT THIS TIME



FIGURE C-1
R.E. GINNA STATION
JPM SUMMARY SHEET

JPM # J000.022

QUESTION #1: J000.022 D

JPM TOPIC: PRZR BACKUP HTRS

QUESTION #2: J000.022 C

CANDIDATE	JPM (SAT/UNSAT)	QUESTION #1 (SAT/UNSAT)	QUESTION #2 (SAT/UNSAT)
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT



FIGURE C-2

R.E. GINNA STATION

JPM SUMMARY SHEET

JPM # J001.001

QUESTION #1: J001.001 A

JPM TOPIC: PT-1 (ROD EXERCISES)

QUESTION #2: J001.001 B

CANDIDATE	JPM (SAT/UNSAT)	QUESTION #1 (SAT/UNSAT)	QUESTION #2 (SAT/UNSAT)
[REDACTED]	UNSAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	UNSAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	UNSAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	UNSAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT



JPM SUMMARY SHEET

QUESTION #1: J013.001 A

QUESTION #2: J013.001 C

[illegible]



FIGURE C-4

R.E. GINNA STATION

JPM SUMMARY SHEET

JPM # J015.001

QUESTION #1: J015.001 A

JPM TOPIC: MANUALLY CALCULATE QPTR

QUESTION #2: J015.001 B

CANDIDATE	JPM (SAT/UNSAT)	QUESTION #1 (SAT/UNSAT)	QUESTION #2 (SAT/UNSAT)
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	UNSAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	UNSAT	SAT	UNSAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	UNSAT	SAT	UNSAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT



JPM SUMMARY SHEET

QUESTION #2: J015.002B

[illegible]



FIGURE C-6

R.E. GINNA STATION

JPM SUMMARY SHEET

JPM # J022.002

QUESTION #1: J022.002A

JPM TOPIC: CONT. MINI PURGE

QUESTION #2: J022.002B

CANDIDATE	JPM (SAT/UNSAT)	QUESTION #1 (SAT/UNSAT)	QUESTION #2 (SAT/UNSAT)
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT



JPM SUMMARY SHEET

QUESTION #2: JO39.001B

[illegible]



FIGURE C-8

R.E. GINNA STATION

JPM SUMMARY SHEET

JPM # J061.003

QUESTION #1: J061.003B

JPM TOPIC: RESET TDAFW

QUESTION #2: J061.003F

CANDIDATE	JPM (SAT/UNSAT)	QUESTION #1 (SAT/UNSAT)	QUESTION #2 (SAT/UNSAT)
[REDACTED]	UNSAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	UNSAT	SAT	SAT
[REDACTED]	UNSAT	SAT	SAT
[REDACTED]	UNSAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	UNSAT
[REDACTED]	SAT	SAT	SAT



FIGURE C-9

R.E. GINNA STATION

JPM SUMMARY SHEET

JPM # J064.002

QUESTION #1: J064.002 D

JPM TOPIC: DIESEL START & LOAD

QUESTION #2: J064.002 G

CANDIDATE	JPM (SAT/UNSAT)	QUESTION #1 (SAT/UNSAT)	QUESTION #2 (SAT/UNSAT)
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	UNSAT	SAT
[REDACTED]	SAT	SAT	SAT
[REDACTED]	SAT	SAT	SAT

JPM SUMMARY SHEET

QUESTION #1: JO078.001A

QUESTION #2: J078.001B

[illegible]



FIGURE D

ROCHESTER GAS and ELECTRIC CORPORATION

Inter-Office Correspondence

JUNE 26, 1989

SUBJECT: License Remediation

TO:

In accordance with the minutes of the License Review Board of 6/27/89, the following requirements must be met or made up prior to restoring you to Active License status:

A. Self Study

1. Immediate Actions
(complete by 7/10/89)

E-0

NAME / DATE

ECA-0.0

NAME / DATE

FR-S.1

NAME / DATE

AP's

NAME / DATE

2. Procedure usage A-503.1
(complete by 7/10/89)

NAME

3. Proposed communication standard
and review with Operations Manager
(complete by 7/15/89)

OPS MGR

4. View communication tape
(complete by 7/15/89)

NAME

- B. Attend E Procedure Regual week of July 10
and satisfactorily complete weekly exam

INST SIG / DATE

- C. Observe operating shift on simulator week
of July 10 and critique with simulator
booth instructor

INST SIG / DATE

- D. Observe video of NRC simulator exam and
critique (complete by 7/15/89)

INST SIG / DATE



E. Complete 20 hours on simulator

4 hrs 7/15/89

INST SIG

4 hrs 7/17/89

INST SIG

4 hrs 7/18/89

INST SIG

8 hrs 7/20/89

INST SIG

F. Satisfactorily complete simulator exam

7/22/89

INST SIG

Upon successful completion of all of the above items, a letter restoring you to Active License status will be sent to Operations.

If there are any questions regarding this program, please feel free to contact me at ext. 577.

Very respectfully,

Frank L. Maciuska
Supervisor
License Training

FLM/smc

xc: R. Carroll
File completed copy in [REDACTED] File
T. Schuler

FIGURE E

ROCHESTER GAS and ELECTRIC CORPORATION

Inter-Office Correspondence

JUNE 26, 1989

SUBJECT: License Remediation

TO: [REDACTED]

In accordance with the minutes of the License Review Board of 6/27/89, the following requirements must be met or made up prior to restoring you to Active License status:

A. Self Study

1. Immediate Actions
(complete by 7/10/89)

E-0

NAME / DATE

ECA-0.0

NAME / DATE

FR-S.1

NAME / DATE

AP's

NAME / DATE

2. Procedure usage A-503.1
(complete by 7/10/89)

NAME

3. Proposed communication standard
and review with Operations Manager
(complete by 7/15/89)

OPS MGR

4. View communication tape
(complete by 7/15/89)

NAME

- B. Attend E Procedure Requal week of July 10
and satisfactorily complete weekly exam

INST SIG / DATE

- C. Observe operating shift on simulator week
of July 10 and critique with simulator
booth instructor

INST SIG / DATE

- D. Observe video of NRC simulator exam and
critique (complete by 7/15/89)

INST SIG / DATE

E. Complete 20 hours on simulator

4 hrs 7/15/89

INST SIG

4 hrs 7/17/89

INST SIG

4 hrs 7/18/89

INST SIG

8 hrs 7/20/89

INST SIG

F. Satisfactorily complete simulator exam
7/22/89

INST SIG

G. Self Study

1. System description AFW

NAME / DATE

2. System description Rod Control

NAME / DATE

3. System description NIS

NAME / DATE

4. PT-1

NAME / DATE

5. ER-NIS.3

NAME / DATE

6. SC-3.30.1/3.30.2

NAME / DATE

H. OJT Walkthrough

1. PT-1

INST SIG

2. ER-NIS.3

INST SIG

3. Local Start AFW

INST SIG



I. Satisfactorily complete JPM re-examination to include:

1. PT-1

INST SIG

2. ER-NIS.3

INST SIG

3. AFW Start

INST SIG

4. Plus ten (10) randomly selected JPM's

INST SIG

Upon successful completion of all of the above items, a letter restoring you to Active License status will be sent to Operations.

If there are any questions regarding this program, please feel free to contact me at ext. 577.

Very respectfully,

Frank L. Maciuska
Supervisor
License Training

FLM/smc

xc: R. Carroll
File completed copy in [REDACTED] File
T. Schuler



FIGURE F
ROCHESTER GAS AND ELECTRIC CORPORATION
Inter-Office Correspondence
June 29, 1989

SUBJECT: NRC OPERATOR REQUALIFICATION EXAMINATION
TO: ROBERT CARROLL

SUMMARY

Numerical item analysis of the NRC OPERATOR REQUALIFICATION EXAMINATION given 06/22/89 indicates two areas that may warrant further investigation. These areas are the questions missed by more than 50% of those taking the examination and the fact that of the questions missed, 44% were missed by three people (not always the same three people).

Those questions missed by more than 50% of those people taking the examination should be reviewed to ensure the questions are academically sound and that the training given actually addressed the questions in the manner in which they were stated.

In the second area, it is unusual to have such a high percentage of questions missed by the same number of people. In each instance of a question being missed by three people, their names should be referenced to see if there is any correlation in their training.

This numerical item analysis indicates that the two failures are most probably individual cases and not the gross results of training or the examination.

The supporting data is attached.



Harry W. Aurand
Training Systems Specialist

xc: G. Meier
J. Neis
F. Maciuska
B. Zollner ✓



NRC OPERATOR REQUALIFICATION EXAMINATION - 06/22/89

Item Analysis

The following questions were answered incorrectly or partially incorrectly by more than 50% of those people taking the examination:

SS11.	2	73%
SS11.	11	82%
SS13.	8	55%



NRC OPERATOR REQUALIFICATION EXAMINATION - 06/22/89

Item Analysis

<u>QUESTION</u>	<u>NUMBER OF PEOPLE NOT RECEIVING FULL CREDIT</u>	<u>PERCENTAGE OF PEOPLE NOT RECEIVING FULL CREDIT</u>
B000. 11	0	0
B000. 32	3	27%
B000. 39	3	27%
B000. 48	0	0
B000. 59	0	0
B000.122	3	27%
B000.137	1	9%
B000.149	3	27%
B000. 6	0	0
B000. 16	0	0
B000. 1	3	27%
B000. 13	3	27%
B000. 21	2	18%
B000. 26	1	9%
B000. 12	0	0
SS11. 1	1	9%
SS11. 2	8	73%
SS11. 3	1	9%
SS11. 7	2	18%
SS11. 9	0	0
SS11. 11	9	82%
SS11. 12	5	45%
SS11. 13	1	9%
SS13. 1	1	9%
SS13. 2	3	27%
SS13. 5	0	0
SS13. 6	3	27%
SS13. 7	0	0
SS13. 8	6	55%
SS13. 9	0	0
SS13. 12	1	9%
SS13. 14	3	27%
SS13. 15	1	9%
SS13. 17	3	27%
SS13. 18	3	27%



NRC OPERATOR REQUALIFICATION EXAMINATION - 06/22/89

SECTION B

QUESTION	MAX											
B000. 11	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
B000. 32	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B000. 39	1.50	1.00	1.00	1.50	1.50	1.50	1.00	1.50	1.50	1.50	1.50	1.50
B000. 48	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B000. 59	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
B000. 122	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
B000. 137	1.50	1.00	1.00	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
B000. 149	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B001. 6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B002. 16	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
B003. 1	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
B006. 13	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
B300. 21	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B300. 26	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B320. 12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL	20.00	13.90	15.50	20.00	20.00	20.00	19.70	19.00	18.50	18.00	17.50	17.00

SECTION A1

QUESTION	MAX											
SS11. 1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS11. 2	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
SS11. 3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS11. 7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS11. 9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS11. 11	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
SS11. 12	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
SS11. 13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL	9.00	5.25	6.75	7.50	8.25	9.00	5.25	8.40	8.25	8.00	8.00	8.25

SECTION A2

QUESTION	MAX											
SS13. 1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 14	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
SS13. 15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
SS13. 18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL	13.00	6.25	10.00	13.00	11.00	12.00	12.00	11.00	10.75	9.75	11.00	13.00
TOTAL PTS	42.00	25.40	32.25	40.50	39.25	41.00	36.95	38.40	37.50	35.75	36.50	38.25



FIGURE G

ROCHESTER GAS and ELECTRIC CORPORATION

Inter-Office Correspondence

July 13, 1989

Subject : Shift Supervisor Involvement During Casualties/Transient on Simulator/In-Plant

To: Shift Supervisors/Control Room Foremen

From my observations of simulator training I have formulated the following policies to enhance Shift Supervisor involvement in maintaining cognizance of the "big picture" and reporting:

1. The Shift Supervisor should classify the event per SC-100 only after the diagnosis of the event has been determined (example: E-0, Step 26 or any other kickouts). Once the SS classifies the event, use the appropriate SC-200 series procedures and the communicator. Remember, you have 15 minutes to report to State and counties once the classification is determined.
2. To ensure that the SS maintains plant status, I expect at least 2 to 3 mini briefings with the Control Room Foreman during a casualty. These briefings should start after immediate actions are completed and contain enough communication to ascertain the following:
 - a. What is the plant status (from the previous briefing)?
 - b. What procedures you are in and what is the current diagnosis of plant conditions?
 - c. Is everything working as expected?
 - d. Where are we headed (procedures, tasks, etc.)?

These should take a minimum amount of time so as not to interfere with EOP implementation. It also is a good idea to gain Control Board operator attention while going over this information with the Control Room Foreman, so that all shift members have the common knowledge.


T. R. Schuler
Operations Manager

TRS/eeh

xc: F. Maciuska
D. Hudnut
J. Widay



FIGURE H

ROCHESTER GAS and ELECTRIC CORPORATION

Inter-Office Correspondence

JULY 21, 1989

SUBJECT: NRC Exam Review

TO: F. Maciuska

I have completed the NRC Exam review and interview with [REDACTED]. The following items were identified as contributing factors in [REDACTED] written exam performance:

1. [REDACTED] indicated that he suffers a great deal of anxiety when taking timed examinations. He is concerned about not only passing the exam, but also about having enough time to complete the exam, as he is a historically slow written exam taker.
2. He appears to take a lot of time reading the questions over and over to ensure he understands what the question is asking.
3. He indicated that he was exhausted due to the exam process. (Stress with long waiting periods.)
4. A number of instances were identified where he misread information from the procedure being used. I feel this is a result of the stress level and exhaustion mentioned above.
5. He indicated that he was not sure how much of an answer was required on some questions. As a consequence, he spent time writing more than was required and not completing some questions due to lack of time.
6. He spends an excessive amount of time on HTFF questions, but answered correctly.

I believe [REDACTED] would benefit from additional practice and training in written examination-taking skills. His knowledge level is good and he has no problem locating the correct references. He appears to spend most of his time reading and understanding written questions. He does not have time to get back to questions or to review the exam.

John Hart
Senior Licensed Instructor

JH012/smc



FIGURE I

ROCHESTER GAS and ELECTRIC CORPORATION

Inter-Office Correspondence

JULY 21, 1989 .

SUBJECT: NRC Exam Review

TO: F. Maciuska

I have completed the NRC Exam review and interview with [REDACTED]. The following items were identified as contributing factors in [REDACTED] written exam performance:

1. [REDACTED] indicated to me that he suffers a great deal of anxiety when taking timed examinations. He is a slow exam taker and is very concerned about successfully completing the exam.
2. He quite often does not understand what a question is asking you, especially ones starting with "Explain why".
3. [REDACTED] spends a lot of time locating the correct procedures to use.
4. [REDACTED] needs to make more use of the Simulator and Turnover Information in answering Static Simulator exam questions.

I believe [REDACTED] would benefit most from additional practice and training in written examination-taking skills. He often misunderstands questions. He needs to improve his ability to locate proper reference material quickly. He needs to be able to differentiate between questions that should be answered using a reference and those not requiring specific information. [REDACTED] also needs to use the Simulator/Turnover Information as reference while taking exams. His level of knowledge and ability to find appropriate procedures appears adequate. His biggest problem is understanding what written questions are asking for.

John Hart
Senior Licensed Instructor

JH011/smc

