

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-295/OL-89-02

Docket Nos. 50-295; 50-304

Licenses No. DPR-39, DPR-48

Licensee: Commonwealth Edison Company  
Post Office Box 767  
Chicago, IL 60690

Facility Name: Zion Station

Examination Administered At: Zion Station/Westinghouse Training Simulator

Examination Conducted: Requalification Examinations for six Reactor Operators  
and six Senior Reactor Operators

RIII Examiner:

*Damon*  
DARREL DAMON

10/18/89  
Date

RIII Examiner:

*Shepard*  
DOUG SHEPARD

10/11/89  
Date

RIII Examiner:

*Burdick for*  
KRISTINE SHEMBARGER

10/18/89  
Date

Chief Examiner:

*Reidinger*  
TIMOTHY REIDINGER

Oct 11, 1989  
Date

Approved By:

*Thomas Burdick*  
THOMAS BURDICK

Oct 11, 1989  
Date

Examination Summary

Examination Administered on September 11-14, 1989 (Report 50-295/OL-89-02):  
Consisted of written and operating requalification examinations administered to six reactor operators and six senior reactor operators.

Results: One reactor operator failed all areas of the examination and one reactor operator failed the entire operating examination. Two senior reactor operators failed only the simulator examinations. A third reactor operator failed the written and JPM portions of the exam. The two senior reactor operators and the first two reactor operators also constituted the crew that failed the simulator examination. The licensee's requalification program is declared unsatisfactory in accordance with the program performance criteria in NUREG-1021 "Operator Licensing Examiner Standards," ES601, "Administration of NRC Requalification Program Evaluations."

## REPORT DETAILS

### 1. Examiners

T. Reidinger, NRC\*  
D. Shepard, NRC  
D. Damon, NRC  
K. Shembarger, NRC

\*Chief Examiner

### 2.A. Examination Development General

The facility's effort and timeliness in developing the requalification examination material in accordance with the Operating Licensing Examiner Standards (NUREG 1021) was generally unacceptable in regards to both quality and quantity of material.

The facility requalification examination test questions and scenario banks needed extensive corrections to achieve the minimum standards that are required for NRC requalification examinations as specified in ES601 of NUREG 1021.

The NRC examiners reviewed samples of the facility test materials as early as March 1989 to allow the facility ample opportunity to respond to NRC input regarding material deficiencies.

However, the facility training representatives had difficulty responding to NRC initiatives throughout most of the examination preparation phase. Region management raised a concern with facility management to improve responsiveness. With involvement of senior licensee management several weeks before the examination, the interface on exam preparation improved and outstanding issues were resolved.

### 2.B. Written Examination Development

The following are examples of widespread deficiencies:

- Some written examination Part B (Limits and Controls) questions exhibited unacceptable redundancy with similar questions/conditions developed for Part A (static simulator) and the dynamic simulator.

e.g. Part B Question: Annunciators: PZR HTRS Auto Trip PZR Level  
Low Heater Off.

Indications: VCT level decreasing, letdown  
flow isolated

Question: What is probable cause?

Answer: Controlling PZR level inst. failed  
low

e.g. Part A Question: . . . Determine . . . plant response to a failed PZR level channel . . .

e.g. Dynamic 89-Z13 Simulator: Malfunction; Controlling Pressurizer Level Channel LT-459 Failure high.

Although the facility utilized the specific job and task analysis as a basis for examination development, it is required that a greater question/condition diversity be exercised in order to broaden the sampling of knowledge and abilities throughout the requalification test spectrum.

- Some Part B developed questions were direct "look up" type questions. This type of question does not meet, as a minimum, the comprehension level of understanding, and therefore is not appropriate for open-reference examinations.

e.g. . . . Question: Steam Generator Blowdown Monitor 2PR-019 is found inoperable. What actions must be taken?

Answer: TECH/SPECS . . . Start Grab Sample . . .

- ES601 requires Part A (Static Simulator) to have a minimum of two "frozen" conditions on the simulator, one condition being at power with some equipment in an abnormal status, and one condition for which the plant could have experienced a major transient resulting in ESFAS initiation. Each of the "frozen" conditions should exhibit one major failure and two to three minor failures to provide sufficient effects to test a wide range of objectives.
- The facility failed to fulfill the Part A requirements for the requalification examination.
  - e.g. - One Static Simulator Setup (1C-1) had only a Steam Generator Tube Rupture at power.
    - The other static simulator setup (1C-2) had a Reactor Coolant Pump Seal Leak with an impulse channel PT-505 malfunction.
- Part A (Static Simulator) requires that the operator's evaluate Technical Specifications (TS) LCO's. Generally, Part A questions did not have the operators evaluate Technical Specifications LCO's.
- The facility determined that the root cause of Part A unacceptability was that the station misread or misinterpreted the requirements for Part A static simulator development.
- Some Part A and B questions exhibited the following deficiencies:

- a. Ambiguous wording, i.e., answers to the written question did not match the intent of written question.
- b. Open ended questions that had more than one specific answer.
- c. Multiple choice questions had discriminating distractors.
- d. Double-jeopardy questions.
- e. Trick questions (ask for effects when there is none).
- f. Superfluous wording - unnecessary information.

It is important to use objective questions on the written examination to ensure consistent grading. This would ensure that parallel grading is within allowed tolerance as defined in ES601.

Some written examination questions and the Job Performance Measures (JPM's) questions had deficiencies in the inconsistent application of the correct knowledge and ability (K/A). In most cases, the correct system was used but the incorrect ability or knowledge was assigned. All of the identified deficiencies were discussed with the facility representatives of the exam team and corrected.

The facility should conduct a thorough review of the written examination question bank and JPM question bank in order to identify all the additional questions which contain the identified deficiencies and revise the questions as necessary to meet the requirements of ES601 prior to future examinations:

## 2.C. Dynamic Simulator Scenario Development

The following observations were made by the NRC concerning the dynamic simulator scenarios that were developed for use during requalification examinations.

- o The facility generally incorporated knowledge and abilities (K/A) as contained in NUREG 1122, "Knowledge and Abilities Catalog for Nuclear Power Plants," with an importance rating of greater than or equal to 3.5.
- o The facility training staff incorporated the required Team Dependent and Time Critical tasks in a well developed format and exceeded the minimum standards defined by ES601. NRC generally accepted all the recommendations made by the examination team for assigning the critical tasks.
- o All the scenarios incorporated an excellent overview of the malfunctions and the transients which comprised the scenario. This enhanced the simulator operator's comprehension of each scenario set. Also the simulator setup guide for initializing, lining up control

simulator setup guide for initializing, lining up control boards, and cues for load swing instructions and sign offs were generally excellent.

- Many of the scenarios generally exhibited a common tendency in that the Senior Reactor Operator expected actions concluded with a transition from E-0 (Rx trip and Safety Injection procedure) to ES1.1-SI Termination procedure. NRC recommended that all termination points in all the scenarios be reviewed for applicability and that the affected scenario termination points be extended to include the major actions beyond the first several steps.

- The original scenarios exhibited a multiplicity of similarly related malfunctions.

e.g. 89-Z8 - Pressurizer Pressure PT-455 fails low,  
89-Z2 - Pressurizer Pressure PT-455 fails to 1700 pounds

e.g. 89-Z15 - FWM-2 - Feed pump trip  
89-Z15 - PCS - 5 - Feed Header Pressure Transmitter Failure  
89-Z13 - FWM - 3 - Feed pump speed malfunction

e.g. 89-Z15 (RCS-2) Narrow range that fails high  
89-Z5 (RCS-2) Narrow range that fails high

NRC recommended that a greater diversity of malfunctions be used to provide a broader comprehensive evaluation of all integrated knowledge and skill requirements of the operators in order to determine areas for which retraining would be needed to upgrade reactor/senior reactor operators.

- During dynamic simulator review with Zion Station, the NRC identified a deviation from the Station's FSAR commitment in the time termination criteria for Steam Generator Tube Rupture. The facility identified "that the total release time shall not exceed thirty (30) minutes. Release time will be accumulated whenever the effected loop MSIV is open and/or when S/G pressure is greater than/equal to 1035 psig". The facility personnel took a position on this issue in conflict with Zion's FSAR commitment which states "after plant trip break flow reached equilibrium at the point incoming safety injection flow is balanced by outgoing break flow . . . the operator identifies the accident type and terminates break flow to the facility steam generator within 30 minutes of accident initiation." The facility station personnel indicated that the training department doesn't train the operators to the 30 minute limit in mitigating break flow as discussed in the station's FSAR.

- The facility incorporated all references to abnormal procedures to reflect a good overview of all the major action steps outlined in the applicable abnormal procedure. One example is:

#### AOP-7.2, Operation With a Failed Instrument Channel, Appendix A:

- a. The failed channel for Tav<sub>g</sub> is selected and defeated.
- b. The failed channel for DT is selected and defeated.
- c. The DT & DT Trip Point Recorder selector is turned and switched to an operable channel.
- d. Tav<sub>g</sub> verified within  $\pm 3^\circ$  of Tref.
- e. Pressurizer level verified normal or returning to normal ( $\pm 5\%$  from program).
- f. Directs tripping of bistables per AOP-7.2

The facility designed all the scenarios to incorporate major emergency procedure recovery actions or immediate actions. (i.e., the facility designed the scenarios to provide a good outline of the major subsequent recovery actions,) e.g., one example is E-1, Loss of Reactor or Secondary Coolant:

- a. Unit number and event announced.
  - b. RCP trip criteria, verified.
  - c. S/G level > 4% or AFW flow > 340 gpm verified.  
(Use Fig. 1 page 14 of E-1 for adverse containment.)
  - d. PZR PORVs and block valves verified closed if pressure is less than 2335 psig.
  - e. SI Termination criteria verified.
- o One or two scenarios did not exhibit a series of malfunctions which should be logically related or linked events as required per ES601. The scenarios overall design did attempt to have related malfunctions in addition to a linked major plant transient.
- o Subsequent time and procedure validation of the seven modified dynamic scenarios was accomplished in one working night. This required an accelerated critique of all the steps or procedures used during normal scenario evaluations. This is undesirable as this time restriction based on simulator availability did affect the thoroughness of examination review. The original simulator scenarios were in some cases substantially revised by the facility to eliminate the malfunction redundancy noted during the initial review and validation. The facility training staff was initially unresponsive to NRC concerns in this matter but rallied in the final days to salvage the project.

#### 2.D. JPM Development

The following contain several observations that were made by the NRC concerning the Job Performance Measures (JPM) that were developed for use during requalification examinations:

- o During the preparation week while reviewing the JPM's for requalification examinations, the NRC examiners identified many JPM's which required corrections prior to using the JPM's for examination purposes.

The initial corrective actions to modify the JPM's as agreed upon were not accomplished in a timely manner, forcing an extension of the review period.

- The initial JPM's did not address all the requirements related to the required references, task standards, task conditions, cues, and critical elements.
- The initial JPM's did not meet the performance standard in that all criteria was not specified for the successful and required completion of steps.
- Critical step designations in the JPM's in general were not accepted by the NRC. (i.e. - Many critical steps were mis-identified by the facility staff as non-critical steps for the JPM's successful completion.)
- Some JPM's did not incorporate a standard format to designate an operator's answer as either satisfactory or unsatisfactory.
- The JPM's required two question minimum was generally exceeded by the facility. The required question/answer references were incorporated per ES601. Some JPM questions/answers needed substantial revision prior to use for the examination.

### 3.A. Examination Administration

The facility was responsible for examination administration with the NRC observing the process. The following are a few specific program strengths and deficiencies that were identified by the NRC during examination administration:

- Formal checklists had been developed by the facility which were utilized to brief the operators prior to each phase of the examination. The formal briefing checklist enhanced the ability of the facility representative to provide consistent information to each group of operators to ensure that they fully understood the examination process.
- Functional restoration guideline FR-S.2 was not initially available for operator examination purposes during the static simulator examination. It was subsequently provided to the operators when it was identified as missing.
- Transportation coordination and security accommodations for the crews during the written examination, Part A and Part B, were excellent. Fluid synchronization by the crews enhanced the timely completion of the written examinations.

- During one dynamic simulator scenario for a nuclear instrument detector failure, the alarms was inconsistent with plant conditions when this malfunction was initiated. Also, one of the running service water pumps had zero amp indications on the pump meter. The first dynamic simulator examination scenario encountered a 15 minute delay in an attempt to repair a Steam Generator "D" level recorder. Reactor Coolant loop "D" Tave meter indicated two to three degrees above the other three RCS loops. The turbine vibration recorder was noted to be inoperable prior to conducting the simulator requalification examinations.

In all instances, no major perturbation was noted on the crew or the scenario overall.

- The facility provided a sufficient number of examination proctors during administration of the written examinations. The two part examination was administered in two separate locations, with two facility representatives available to proctor both examination rooms while at the same time providing escorts to any individual wanting to leave the examination rooms, ensuring that they did not interact with any other individual participating in the examination.
- Good simulator execution and coordination was generally displayed by all the simulator operators not originally involved during the preparation week. The simulator operators were responsive to all the phone calls made from all members of the crew.
- The Facility exhibited excellent coordination for JPM's completions at the plant. The scheduling of JPM's enhanced the possibility that only one operator would be stationed in a particular area or needed a specific procedure/piece of equipment at any one time. This provided for a timely completion of this phase of the examination.
- None of the JPM's were conducted on the simulator. Many of the JPM's selected for the requalification test would have been more suitably conducted on the simulator.

e.g. - Transfer to Cold leg Recirculation

The NRC will require scheduling and conducting simulator based JPM's on the simulator for future requalification examinations. This would minimize operator's fatigue and enhance performance due to the operator no longer having to "talk through" all the valve, pump, and switch lineup required for that specific JPM. It also facilitates a high degree of on-the-job fidelity.

- ES601 requires that the JPM walkthrough be planned for approximately two and one half hours in length and a minimum of ten JPM's will be evaluated.



Zion station JPM's generally averaged ten minutes each in length. Some JPM's exhibited a very short time frame to complete the task and are unsuitable for future NRC examinations.

e.g. - Respond to Nuclear Power Generation/ATWS (000 U290501.02)  
(5 minutes)

1. Trip the main turbine locally at the turbine pedestal.

e.g. - Respond to Nuclear Power Generation/ATWS (000 O290501.01)  
(5 minutes)

1. Trip rod drive MG sets.

The JPM's selected for future NRC requalification examinations may exceed the required minimum of ten JPM's to meet the approximate time of two and one-half hours for JPM evaluations.

- ° One initial JPM, Respond to Nuclear Power Generation/ATWS (000 O290501.02), was revised to eliminate a substep at the turbine pedestal. (i.e. Operator verifies auto stop oil pressure is decreasing). The facility indicated that the training department does not train the operators to verify auto stop oil pressure is decreasing on the adjacent oil stop pressure gauge when the operator trips the turbine locally, but only trains them how to mechanically trip the turbine without subsequent operator verifications. NRC recommends that the operators be trained to confirm the results of their actions in addition to the physical manipulation of any device, switch, or pump.

### 3.B. Examination Evaluations

The overall evaluations on the operating examinations, which consisted of dynamic simulator scenario operations and job performance measure (JPM) plant walkdowns, were not entirely consistent between the NRC examiners and the facility evaluators for all 12 operators. The facility and the NRC agreed on one crew failure whereas the NRC alone failed three operators on the JPM portion of the examination.

The overall evaluations on the written examinations with parallel grading by the NRC and the facility resulted in consistent evaluations for all 12 operators. Initially, only the NRC identified two failures on the requalification written examination. The facility was advised several times during regional meetings and preparation site visits that the overall grade on the written examination will be calculated by using a ratio of total points received by the operator over the total point value of the written examination for the operator's score. The facilities initial evaluator scores were a percentile average of the two parts of the examination. This incorrectly led to an overall station evaluation that all their operator's passed the written examination. These scores

were revised by the facility when the NRC examiners brought the error to their attention.

Coevaluation by the NRC examiners and the facility evaluators of the operators performance on the examination was incorporated. Coevaluations provided the NRC with the necessary information to assess the individual operators performance as well as the facility's requalification program performance.

The following are some observations made by the NRC following the operational examinations concerning individual/crew evaluations.

- ° Some individual crew members failed to ensure that all the crew members they were addressing heard and understood all the transmitted information which resulted in required actions being delayed. Overall, the communications among crew members was good.
- ° Examiner's standards require that the crews shall be evaluated by both the NRC and facility evaluators with the NRC observing the facility critique. The crew and individual critique with the crew present was generally objective in nature as the NRC expected for crew evaluations. In general, the simulator evaluator observations were accurate, however, at times the evaluation of the observations were inaccurate, e.g. emergency classification.

### 3.C. Examiner's Concerns

During administration of the operating examinations, the NRC identified several operational concerns which are described below.

- ° Initially, scenario 89-Z15 incorrectly permitted the Senior Reactor Operator to transition to Functional Restoration Guideline FR-H.1 - Response to Loss of Secondary Heat Sink from E-0 (Reactor Trip and Safety Injection) fold out Red Path Summary. Westinghouse Owner's Group guidelines do not permit this transition. During this scenario the Senior Reactor Operator did incorrectly transition to FR-H-1 using the E-0 fold out page.

The training department indicates that they routinely allow this incorrect transition during training.

- ° Commonwealth Edison provided in a letter to the NRC, a less than conservative emergency classification declaration philosophy in regards to the recently administered NRC requalification examination at Zion Station. During one dynamic scenario, the designed scenario differed from the actual events only in the fact that one of the turbine driven main feed pumps did not trip prior to the reactor trip. After the reactor trip, conditions in the actual scenario were identical to the planned scenario. The resultant classification

of EAL-4H did not differ from the original EAL-4H emergency classification according to the NRC.

Classification of 4H does not depend on the operability of the main feed pumps as Commonwealth Edison letter suggests but on the availability of the main feed pumps, auxiliary feed or RHR shut down cooling. RHR system and auxiliary feed systems were not available for this scenario. Operability plays no part in declaring an event in accordance with EAL-4H.

The SRO in this event directed the BOP to restart the main feed pump, but this direction was not successfully carried out until a reset of the turbine generator 86 relay was accomplished and reactor trip breakers were cycled. In both, the planned scenario and the as run scenario, the 1A MFP was available and the EAL-4H classification was considered appropriate by the facility but not appropriate when 1A and 1B main feed pumps are available. The operations management representative present during the examination agreed with the NRC position.

NRC considers the EAL-4H classification as appropriate for this scenario and the Commonwealth Edison letter only addressed the definition of operability not availability which was the major issue in the classification.

- JPM 0620330101 - "Transfer ESF 4KV Bus from the D/G to Normal Feed", had a 100% failure rate on the second JPM question. Although this JPM wasn't a common JPM for the operators, four operators failed this question.
- JPM 0399020101 - "Open the Main Steamline Isolation Valves" had a 62.5% failure rate on the first JPM question. This question and JPM was classified as common.
- Five other JPM's had common questions that were missed by 50% of the examinees tested on that item. For example;

- 0649020204 - Isolate D/G from system
- 0159020401 - Respond to NIS Deviation Alarm
- 0060160104 - Transfer to Cold Leg Recirculation \*
- 0050020104 - Loss of RHR Pump Amps
- 0040160101 - Establish Excess Letdown

\* All twelve examinees were tested on this item. All other items were used on eight of the examinees.

ES601 states that the requalification program may be determined to be unsatisfactory when the same common JPM question is missed by at least 50% of the examinees.

#### 4. Evaluation of Facility Evaluators

In addition to evaluating the operators performance, the NRC also evaluated the facility evaluators, using ES601 as a guideline, in their ability to conduct consistent and objective examinations. Included in this evaluation is the ability of the facility evaluators to provide an unbiased evaluation of the facility operators.

The following are some examples of the observations made concerning the facility evaluators:

- ° As the individual JPM task completion progressed throughout the day, the facility evaluators would generally require as thorough an answer as they required during the individual's first several JPM completions.
- ° On several occasions during the JPM administration, the facility evaluators failed to ask followup questions when an operator's knowledge was in question or the evaluators were unable to re-phrase questions presented to the operators if the operator was not sure what the question was soliciting.
- ° On at least one occasion during a JPM performance a facility evaluator wrote on his JPM question and answer key this response to an operator's answer. "Did not state ... but his statement . . . implies this. His voice inflection indicated this to me."

The facility evaluator rated the operator's answer as satisfactory. The NRC rated the same answer as unsatisfactory.

- ° During administration of the JPMs, a few of the facility evaluators at certain times used verbal cues and/or prompting which led operators to an incorrect decision/action and could have resulted in an inadequate examination. When this occurred, the NRC examiners would privately counsel the facility evaluators and point out the deficiencies in their examination administration techniques.
- e.g. 1). After answering question number one in JPM 0029300101, the operator stated "I'll go with that one", the evaluator responded with "I say that's a good idea".
- 2). During an operator's response to question number two in JPM 004055010403, the facility evaluator cut him off and said "okay" before the operator completed his answer.
- 3). Facility evaluator was very slow in giving cues, allowed the operator to complete 3 to 4 steps/actions prior to giving the correct cue.

4). Facility evaluator when asking JPM questions would state "Have to tell me when you are completed" but tended to use this technique only when operator incorrectly answered the question.

- ° One facility evaluator graded one operator's JPM questions as a 71.4%. NRC graded the same individual as 47.6%. The disparity of approximately 24% is directly related to the facility evaluator incorrectly evaluating answers from the operator as satisfactory.

e.g.(1) Question A: Why is the service water cross-tie valve (OSW005) . . . in the open position for operation?

Answer: This allows SW flow to the affected unit (non-essential) from the other unit's SW's loop.

NRC documented operator's response: Allows cooling of AFW from the other side.

Facility documented operator's response: One unit supplies cooling to other.

NRC evaluated the facility's documentation of the operator's response as unsatisfactory. P & ID reflects that service water doesn't cool AFW from the other side (unit)

e.g.(2) Question B: Explain why you would expect to receive NIS Power Range Lower Detector Hi Flux Deviation Alarm?

NI-41	51%
NI-42	50%
NI-43	49%
NI-44	50%

Answer: Each upper/lower detector current reading is compared to the average of the upper/lower detector current and when a channel exceeds 2% of the average the alarm is activated when power is greater than 50%.

NRC documented operator's response: "2% difference between NI-41 and NI-43 will give what I assume is a QPTR greater than 1.02.

Facility documented operator's response: Facility did not document operator's response but graded it as satisfactory.

NRC considers the operator's given answer as unsatisfactory.

The facility evaluators exhibit some lapses in their evaluation techniques during phases of the requalification examination. Overall, the evaluators were regarded as average in comparison to other facilities. The

previously mentioned observations point out the need to upgrade the formal training on how to conduct examinations for the personnel who will be utilized as evaluators during requalification examinations.

#### 5. Requalification Examination Results

Examination results are that the NRC passed crew's 1 and 3 and failed crew 2. Also, the NRC failed 3 RO's on JPM's and 2 RO's on the written examination.

The facility had the same results as the NRC on all three crews on the simulator examinations. The facility grading resulted in two RO failures on the written and no failures on the JPM sections of the requalification examination.

#### 6. Program Evaluation

Per NUREG 1021, ES601, Zion requalification program was determined to be unsatisfactory. The program did not meet the following criteria:

- a). Only 58% (7/12) of the operator's passed the examination. ES601 requires at least 75% of all the operators pass the examination.
- b). At least 50% of the operators examined failed common JPM questions administered to them in six cases.
- c). The NRC considers the training staff deficient in the development of requalification examinations in accordance with ES601 requirements.

#### 7. Exit Meeting

An exit meeting was held on September 15, 1989, between the facility and the NRC to summarize all of the observed requalification program and operator strengths, deficiencies and concerns.

#### Attendance List

K. Shembarger, Examiner, NRC  
D. Damon, Examiner, NRC  
T. Reidinger, Chief Examiner, NRC  
T. Burdick, Operator License Section Chief, NRC  
G. Wright, Operations Branch, DRS, Chief, NRC  
J. D. Smith, Senior Resident, NRC  
D. Shepard, Examiner, NRC  
L. E. Davis, Director of OPS Programs, PTC/CECo  
D. G. Selph, Senior Instructor, PTC/CECo  
W. Stone, Regulatory Assurance Supervisor, Zion  
T. Koleno, Training Instructor, Zion  
R. Harrsch, Operating Rep, SCRE, CECo  
A. Ockert, Training Supervisor, CECo

Haral Logaras, Operating Training, CECo  
Pete LeBlond, Assistant Supt., Oper, CECo  
Richard Flessner, Admin. Engineer, PWR Operations, CECo  
T. P. Joyce, Zion Station Manager, CECo  
K. L. Graesser, General Manager, PWR OPS, CECo  
A. M. Bongiovanni, Resident Inspector, NRC  
J. Brandes, Training Instructor, CECo  
G. Trzyna, Nuclear Licensing Administrator, CECo  
G. Vanderheyden, Operations Training Supervisor, CECo Braidwood

Facility: Zion

Examiners: Reidinger, Shepard, Shembarger, Damon

Date(s) of Evaluation: Week of September 11, 1989

Areas Evaluated: ---X--- Written ---X--- Oral (JPM) ---X--- Simulator

Examination Results

	<u>RO</u> <u>Pass/Fail</u>	<u>SR0</u> <u>Pass/Fail</u>	<u>Total</u> <u>Pass/Fail</u>	<u>Evaluation</u> <u>(S, M, or U)</u>
Written Examination:	4/2	6/0	10/2	S
Operating Examination:				
JPM	3/3	6/0	9/3	S
Simulator	4/2	4/2	8/4	U
Evaluation of facility written examination grading:				S

Crew Examination Results:

	<u>Crew 1</u> <u>Pass/Fail</u>	<u>Crew 2</u> <u>Pass/Fail</u>	<u>Crew 3</u> <u>Pass/Fail</u>	<u>Evaluation</u> <u>(S, M, or U)</u>
Operating Examination:	Pass	Fail	Pass	S

Overall Program Evaluation

Unsatisfactory

Submitted:  
*T. Reidinger*  
T. Reidinger  
Examiner

Forwarded:  
*T. Burdick*  
T. Burdick  
Section Chief

Approved:  
*G. Wright*  
G. Wright  
Branch Chief