

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-331/OL-92-01

Docket No. 50-331

License No. DPR-49

Licensee: Iowa Electric Light and Power Company  
IE Towers  
P. O. Box 351  
Cedar Rapids, IA 52406

Facility Name: Duane Arnold Energy Center

Examination Administered At: Duane Arnold Energy Center  
Palo, Iowa

Examination Conducted: June 8-12, 1992

Examiners:

R. L. Doornbos for  
M. E. Bielby

7-7-92  
Date

M. Riches, Pacific Northwest Laboratories (PNL)

Chief Examiner:

R. L. Doornbos  
R. L. Doornbos

7-7-92  
Date

Approved By:

M. J. Jordan  
M. J. Jordan, Chief  
Operator Licensing Section 1

7/7/92  
Date

Examination Summary

Examination administered on June 8-12, 1992 (Report No. 50-331/OL-92-01)

Written and operating requalification examinations were administered to nine Senior Reactor Operators (SROs) and three Reactor Operators (ROs). Two operating shift crews, and two staff crews, were evaluated on the simulator portion of the NRC examination. (Four additional operators, to complete crew complements were evaluated only during the simulator portion of the examination.)

Results: There were no individual failures on any portion of the examination and all crews passed the dynamic simulator portion of the examination. In accordance with the criteria of NUREG-1021, Revision 6, Operator Licensing Examiner Standards, ES-601, C.2.b.(1), the Duane Arnold Requalification Training Program is assigned an overall rating of satisfactory.

Strengths:

- Improved quality verification on facility requalification exam bank. (See Section 3)
- Incorporation of current industry problems (loss of electrical bus) into the examination. (See Section 3)
- Senior Reactor Operator command and control as well as crew performance observed during the dynamic simulator scenarios was good. (See Section 4)
- Assignment of individuals to coordinate specific examination sections during the prep and exam weeks was good. (See Section 5)

Weaknesses:

- Several proposed JPMs were not written to the current station procedure revision. (See Section 3)
- During this requalification examination, eight of the nine SROs started Technical Specification shutdowns before contacting the operations supervisor. This was not consistent with the Operations Supervisor's expectations. (See Section 3)

## REPORT DETAILS

### 1. Examiners

\*\*R. L. Doornbos, Chief Examiner, NRC, Region III  
\*\*M. E. Bielby, NRC, Region III  
\*\*M. Riches, Pacific Northwest Laboratories (PNL)

### 2. Facility Representatives Contacted

+D. Wilson, Plant Superintendent  
+G. VanMiddlesworth, Assistant Plant Superintendent, O&M  
\*\*S. Swails, Manager, Nuclear Training  
+C. Mick, Operations Supervisor  
\*\*R. Anderson, Assistant Operations Supervisor  
+J. Bjorseth, Assistant Operations Supervisor  
\*\*F. VanEtten, Operations Training Supervisor  
\*\*J. Christensen, OSS-A, Temporary OSS-Training Center  
+L. Heckert, Regulatory Communications Specialist  
\*\*R. Brown, Senior Training Instructor  
\*\*M. Fisher, Senior Training Instructor  
\*\*W. Render, Senior Training Instructor  
\*\*T. VanWyen, Senior Training Instructor  
\*\*M. Pettengill, Training Instructor  
\*\*R. Minear, Training Instructor  
+J. Bashore, Training Instructor  
+R. Hunt, Simulator Staff

### NRC Representatives

+M. Parker, Senior Resident Inspector  
\*\*M. Jordan, Chief, Operator Licensing Section 1  
\*\*D. Liao, Reactor Engineer, RIII

\*Denotes those attending the training exit on June 11, 1992.  
+Denotes those attending the management exit on June 12, 1992.

### 3. Examination Material

#### a. Written Exam

- (1) The questions for both sections of the written examination were adequate. A few direct lookup questions were replaced by the exam team.
- (2) Several of the questions provided in the Section B portion of the written examination were at the memory knowledge level. These were rewritten by the exam team to be more operationally oriented.

- (3) The quality verification (i.e. one correct answer per question, few grammar errors) of exam questions and answers improved from the 1991 requalification examination.
- (4) In light of current industry problems, the use of a loss of an electrical bus as part of the static simulator exam was very appropriate. The static was discriminating and challenging to the operators.

b. Job Performance Measures (JPMs)

- (1) Several proposed JPMs were not written to the current procedure revision. This was corrected by the exam team. One procedure revision was not placed in the simulator procedures file by the facility prior to exam administration. This was immediately corrected when identified during the examination.
- (2) JPM questions did not identify if references were allowed in answering the question.

c. Scenarios

- (1) Prior to this exam, discussions were held with the Operations Supervisor regarding expected SRO actions when a Technical Specification shutdown is required. During the requalification examination, eight of the nine SROs started Technical Specification shutdowns before contacting the operations supervisor. This was not consistent with the Operations Supervisor's expectations.
- (2) The scenarios used in the examination adequately exercised all areas of the Emergency Operating Procedures (EOPs).
- (3) While still a weak area, Individual Scenario Critical Task (ISCT) designation improved.
- (4) A recent change to the EOPs allows operation in the shaded area of the RPV Saturation Temperature graph. Operations conducted while in this graph are allowed only while using the fuel zone instruments for level when increased monitoring of these instruments for erratic behavior is provided. As evidenced during the examination, a firm definition of "erratic behavior" has not been achieved. Further, if the operator fails to notice the erratic behavior and the fuel zone

instruments fail high to an acceptable indicated water level, the reactor core could be uncovered without the knowledge of the operators. Without a firm definition of erratic fuel zone behavior, operator training in this area may not be adequate to support operations within the shaded graph area.

The operations department stated they would look at this area again and provide the Senior Resident Inspector with their position.

- (5) 10 CFR 50.72 states, "The licensee shall notify the NRC immediately after notification of the appropriate State or local agencies and not later than one hour after the time the licensee declares one of the Emergency Classes." SROs during the simulator exam properly provided notifications to the State within the required time limit. However, the "B" OSS, on several occasions reported to the "A" OSS that the state and local notifications had been made and that they had an hour from the time of declaration to report to the NRC. While this meets the specific guidance in 10 CFR 50.72, it should be noted that the regulations call for immediate notification, but not later than one hour. This one hour is to allow for emergency actions to be taken before notification, but not for delay in notification.

#### 4. Examination Administration/Personnel Performance

The facility evaluators used in the regualification examination were generally good.

Instructions to the operators at the start of the JPMS indicated that the evaluator was everyone the operator would need to communicate with. During JPM performance, operators would typically talk through communication steps (i.e., "I would call the control room and request that they . . ."). Evaluators did not ensure the candidate's communication steps were properly performed.

Evaluator followup questioning on JPMS was good.

One operator had completed the JPM and returned all test materials to the evaluator. When the facility evaluator provided the questions to the second operator, the first operator said ". . . Oh, I forgot to put that in Auto . . ." and placed the switch in Auto. This was a critical JPM step. The NRC evaluator failed the operator on this JPM. Although no one failed the JPM portion of the examination,

the facility evaluator was less conservative than the NRC evaluator.

During the dynamic simulator phase of the examination, facility evaluators were more stringent in grading than the NRC examiners. This resulted in a more conservative evaluation of crew competencies.

Senior Reactor Operator command and control and crew communications were good.

Plant housekeeping was good.

#### 5. General Observations

The Assistant Plant Superintendent sent a letter to the Operations Supervisor directing that examinees not be assigned to shift duty once the examination process has started until all examination results are known. This prevented the necessity of identifying a person who failed a portion of the exam early in the week, and giving that person a negative feeling for the rest of the exam.

The training staff, security and radiation protection personnel were courteous and professional throughout the examination.

The examination prep week and administration were very well coordinated. This is attributable in large part to the licensee's assignment of individuals to handle specific portions of the examination.

During scenario's requiring moving individuals to assembly areas, the SRO's made the announcement "Plant evacuation" over the public address system. This term to the operation personnel meant for the plant personnel to report to their designated assembly areas, not to evacuate the plant. The use of the term plant evacuation when assembly is desired could confuse onsite personnel outside of the operations department (i.e., contractors, etc.) resulting in their evacuation from the site. Because of the potential for confusion on "evacuation" versus "assembly", the licensee agreed to evaluate the terminology and ensure training was being provided.

#### 6. Exit Meeting

An exit with the facility training department was conducted on June 11, 1992. The management exit was June 12, 1992. The facility representatives that attended the meetings are listed in Section 2 of this report.

The following items were discussed during each exit:

- a. Crew communications, command and control.
- b. Evaluator quality and conduct.
- c. Training department coordination of the exam process.
- d. Knowledge level of examination questions.
- e. Handling of Technical Specification Shutdown requirements.
- f. RPV Saturation Temperature Curve operations.
- g. Use of evacuation terminology when assembly is what is desired.
- h. 10 CFR 50.72 notifications to the NRC.

ENCLOSURE 2

SIMULATION FACILITY REPORT

Facility Licensee: Iowa Electric Light and Power, Duane Arnold

Facility License Docket No.: 50-331

Operating Tests Administered On: June 9-10, 1992

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of noncompliance with 10 CFR 55.45 (b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM

DESCRIPTION

None



ENCLOSURE 3

REQUALIFICATION PROGRAM EVALUATION REPORT

Facility: Duane Arnold Energy Center

Examiners: R. Doornbos, Chief Examiner  
M. Bielby  
M. Riches

Dates of Evaluation: June 9-10, 1992

Areas Evaluated: X Written X Oral X Simulator

Examination Results:

	<u>RO</u> <u>Pass/Fail</u>	<u>SRO</u> <u>Pass/Fail</u>	<u>Total</u> <u>Pass/Fail</u>	<u>Evaluation</u> <u>(S or U)</u>
Written Examination	<u>3/0</u>	<u>9/0</u>	<u>12/0</u>	<u>S</u>
Operating Examination				
Oral	<u>3/0</u>	<u>9/0</u>	<u>12/0</u>	<u>S</u>
Simulator	<u>3/0</u>	<u>9/0</u>	<u>12/0</u>	<u>S</u>

Evaluation of facility written examination grading: S

Crew Examination Results:

	<u>Crew 1</u> <u>Pass/Fail</u>	<u>Evaluation</u> <u>(S or U)</u>	<u>Crew 2</u> <u>Pass/Fail</u>	<u>Evaluation</u> <u>(S or U)</u>
Operating Examination	<u>Pass</u>	<u>S</u>	<u>Pass</u>	<u>S</u>
	<u>Crew 3</u> <u>Pass/Fail</u>	<u>Evaluation</u> <u>(S or U)</u>	<u>Crew 4</u> <u>Pass/Fail</u>	<u>Evaluation</u> <u>(S or U)</u>
	<u>Pass</u>	<u>S</u>	<u>Pass</u>	<u>S</u>

Overall Program Evaluation

Satisfactory S Unsatisfactory       

Submitted:  
R. Doornbos  
Examiner  
7/7/92

Forwarded:  
M. Jordan  
Section Chief  
7/7/92

Approved:  
G. Wright  
Branch Chief  
7/7/92