December 19, 2000

Mr. Gary Van Middlesworth
Site General Manager
Duane Arnold Energy Center
Nuclear Management Company, LLC
3277 DAEC Road
Palo, IA 52324

SUBJECT: DUANE ARNOLD ENERGY CENTER - NRC INSPECTION REPORT 50-331/00-13(DRS)

Dear Mr. Van Middlesworth:

On November 27 through December 1, 2000, the NRC conducted its biennial inspection of the licensed operator requalification training program at the Duane Arnold Energy Center. The results of this inspection were discussed with you and other members of your staff on December 1, 2000, and during a subsequent telephone conversation with Mr. Keith Young on December 15, 2000. The enclosed report presents the results of this inspection.

This inspection was an examination of activities conducted under your license as they relate to safety and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

No findings of significance were identified.

In accordance with 10 CFR Part 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

We will gladly discuss any questions you have concerning this inspection.

Sincerely

/RA/

David E. Hills, Chief
Operations Branch
Division of Reactor Safety

Docket No. 50-331
License No. DPR-49

Enclosures: 1. Inspection Report 50-331/00-13(DRS)
2. List of Documents Reviewed

cc w/encls: E. Protsch, Executive Vice President -
Energy Delivery, Alliant;
President, IES Utilities, Inc.
Robert G. Anderson, Plant Manager
K. Peveler, Manager, Regulatory Performance
State Liaison Officer
Chairperson, Iowa Utilities Board
The Honorable Charles W. Larson, Jr.
Iowa State Representative
K. Young, Training Manager

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Operations Branch
Division of Reactor Safety

Docket No. 50-331
License No. DPR-49

Enclosures: 1. Inspection Report 50-331/00-013(DRS)
2. List of Documents Reviewed

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REGION III

Docket No:	50-331
License No:	DPR-49
Report No:	50-331/00-13(DRS)
Licensee:	Alliant, IES Utilities Inc.
Facility:	Duane Arnold Energy Center
Location:	3277 DAEC Road Palo, Iowa 52324-9785
Dates:	November 27 through December 1, 2000
Inspectors:	Hironori Peterson, Senior Operations Lead Inspector Jay Hopkins, Senior Operations Inspector
Approved by:	David E. Hills, Chief Operations Branch Division of Reactor Safety

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

SUMMARY OF FINDINGS

IR 05000331-00-13(DRS), on 11/27-12/01/2000, Alliant, IES Utilities Inc., Duane Arnold Energy Center, Unit 1. Licensed Operator Requalification Training Program.

The inspection was conducted by two regional senior operations specialists. There were no findings of significance identified during this inspection.

Report Details

1. REACTOR SAFETY

1R11 Licensed Operator Requalification

a. Review of Operating History - Effectiveness of Operator Training

(1) Inspection Scope

The inspectors reviewed the plant's operating history from January 1999 through November 2000, to assess whether the licensed operator requalification training program had addressed operator performance deficiencies noted in the plant.

(2) Findings

No findings of significance were identified.

b. Requalification Examination Material

(1) Inspection Scope

The inspectors reviewed the annual requalification operating and written examination material to evaluate general quality, construction, and difficulty level. The operating examination material consisted of dynamic simulator scenarios and job performance measures (JPMs). The written examination material, which was one of six scheduled written examinations for Senior Reactor Operators (SRO) and Reactor Operators (RO), consisted of 35 open reference multiple choice questions (20 questions written examination and 15 questions static simulator examination). The inspectors reviewed the methodology for developing the examinations, including the Licensed Operator Requalification Training (LORT) program two year sample plan, probabilistic risk assessment insights, previously identified operator performance deficiencies, and plant modifications. The inspectors assessed the level of examination material duplication during the current year annual examination (one of six exams) and with last year's annual examinations. The inspectors also interviewed members of the licensee's training staff and discussed various aspects of the examination development.

Specific documents reviewed for this inspection are listed in Enclosure 2.

(2) Findings

No findings of significance were identified.

c. Requalification Examination Administration Practices

(1) Inspection Scope

The inspectors observed the administration of the requalification operating test to assess the facility licensee's effectiveness in conducting the test and to assess the facility evaluators' ability to determine adequate performance using objective, measurable performance standards. The inspectors evaluated the performance of two operating shift crews during two dynamic simulator scenarios and five JPMs in parallel with the facility evaluators. The inspectors reviewed the facility evaluator's evaluation and assessment of the licensed operators, including for one written examination failure, two individual simulator operating test failures, and one overall crew failure on the simulator test. The inspectors observed the training staff personnel administering the operating test, including pre-examination briefings, observations of operator performance, individual and crew evaluations after dynamic scenarios, techniques for JPM cuing, and the final evaluation briefing for licensed operators. The inspectors noted the performance of the simulator to support the examinations. The inspectors also reviewed the licensee's overall examination security program.

Specific documents reviewed for this inspection are listed in Enclosure 2.

(2) Findings

No findings of significance were identified.

d. Requalification Training Program Feedback Process

(1) Inspection Scope

The inspectors assessed the methods and effectiveness of the licensee's processes for revising and maintaining its licensed operator continuing training program up to date, including the use of feedback from plant events and industry experience information. The inspectors interviewed licensee personnel (operators, instructors, training management, and operations management) and reviewed the applicable licensee's procedures. In addition, the inspectors reviewed Quality Assurance and Self-Assessment Audits.

Specific documents reviewed for this inspection are listed in Enclosure 2.

(2) Findings

No findings of significance were identified.

e. Remedial Training Program

(1) Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted during the previous annual requalification examinations and the training planned for the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans, and interviewed licensee personnel (operators, instructors, and training management). The inspectors reviewed examination remediation packages for the one written, two operating, and one crew examination failures for the current week's examination, and the one crew failure during the first week of examinations to ensure that remediation and subsequent re-evaluations were completed prior to returning individuals to licensed duties.

Specific documents reviewed for this inspection are listed in Enclosure 2.

(2) Findings

No findings of significance were identified.

f. Conformance with Operator License Condition

(1) Inspection Scope

The inspectors evaluated the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses, including the process for tracking on-shift hours for licensed operators. The inspectors also reviewed eleven (six ROs and five SROs) licensed operators' medical records maintained by the facility for ensuring the medical fitness of its licensed operators. The inspectors performed in-depth review of selected medical records to assess compliance with medical standards delineated in ANSI/ANS-3.4 and with 10 CFR Part 55.21 and Part 55.25.

Specific documents reviewed for this inspection are listed in Enclosure 2.

(2) Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. Van Middlesworth and other members of licensee management at the conclusion of the inspection on December 1, 2000. Subsequent to the exit meeting, Mr. K. Young, Training Manager, was notified via telephone conversation the resolution of the medical records maintenance on December 15, 2000. The licensee acknowledged the observations and did not identify any information as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Anderson, Plant Manager
R. Brown, Quality Assurance Manager
D. Curtland, Operations Manager
M. Davis, Training Supervisor - Operations
M. Fisher, Instructor/LORT Examination Developer
D. Kozich, Quality Assurance Auditor
B. Murell, Supervisor, Regulatory Compliance
M. Pettengill, Instructor/Evaluator
G. Thullen, Instructor/LORT Examination Developer
G. Van Middlesworth, Site General Manager
K. Young, Training Manager

NRC

B. Burgess, Chief, Reactor Projects Branch 2
P. Prescott, Senior Resident Inspector, DAEC
H. Peterson, Senior Operations Lead Inspector
J. Hopkins, Senior Operations Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS

CFR	Code of Federal Regulations
DAEC	Duane Arnold Energy Center
DRS	Division of Reactor Safety
JPM	Job Performance Measure
LORT	Licensed Operator Requalification Training
NRC	Nuclear Regulatory Commission
RO	Reactor Operator
SRO	Senior Reactor Operator

Enclosure 2

LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents referenced and/or reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that NRC inspectors reviewed the documents in their entirety, but rather that selected sections or portions of the documents were referenced and/or evaluated as part of the overall inspection effort. NRC acceptance of the documents or any portion thereof is not implied.

Procedures/References

- Operations Training Instructions (OTI) 112, “Exam Security,” Revision 1
- OTI-104, “Licensed Operator Requalification Exam Preparation and Development,” Revision 4
- Training Department Administrative Procedures (TDAP) - No. 1830.4, “Licensed Operator Requalification Program Description,” Revision 3
- Systematic Cognitive Level Ranking, “DAEC Guidance Document Adapted from NUREG 1021"
- DAEC Revision 4, PRA Results
- OTI-105, “Licensed Operator Requalification Examination Administration,” Revision 8
- OTI-109, “Operator Training Issues Process,” Revision 1
- Operating Instruction (OI) 153, “Standby Liquid Control System,” Revision 28
- Abnormal Operating Procedure (AOP) 915, “Shutdown Outside Control Room,” Revision 18
- Operations Department Instruction (ODI) 009, “Nuclear Station Plant Equipment Operator, Reactor Operator, Senior Reactor Operator, and Shift Technical Advisor Qualifications Requirement,” Revision 14
- Operating Order 00-133-2, “Operator License and Qualification Restrictions”
- Quality Assurance Procedure (QAP) 1116.4, “Internal Assessment Program,” Revision 15
- Quality Assurance Internal Assessment Guide, Section 3.0, “Assessment Planning”

Licensed Operator Requalification Training Documentation

- Licensed Operator Requalification Training 1999-2000 Two Year Plan, Revision 3
- Requalification Training Attendance Records (1999 - 2000)
- 1999/2000 Sample Plan - LOR Biannual Exam

Other Material Reviewed

- Control Room Operator Proficiency Log Records for the Current Training Period which Indicated the On-Shift Watch Standing Hours for Licensed Operators at the Facility
- Medical Records for Eleven Licensed Operators (5 SROs and 6 ROs)
- Training Requirements Detailed Completions - Medical Physical Examination Schedules
- Various Requalification Course Critique Summary and Individual Course Critique Sheets from June to August 2000
- Sample of Training Management Action Request (TMAR)
  TMAR 1999-0688; TMAR 1999-1247; TMAR 2000-0060; TMAR 2000-0433; TMAR 2000-0911; TMAR 2000-1077; TMAR 2000-1380; TMAR 2000-1508; TMAR 2000-1515

Enclosure 2

Current and Previous Annual Examination Material and Documentation

- Year 2000 Licensed Operator Requalification Program Annual Examination Sample Plan
- Year 2000 Simulator Evaluations for Two Operations Crew and Ten Individual Licensed Operators
- Remedial Training Packages for Crew and Individual Failures for the 1999 and 2000 Annual Operating Examination and the 2000 Biennial Written Examination
- Year 2000 - Cycle 6 (Week 5) Written Examinations for SROs and ROs
- Year 2000 - Cycle 6 (Week 5) Static Simulator Examination (SSE 13) for SROs and ROs
- Two Simulator Scenarios for Annual Operating Examination:
  - ESG 46, "Loss of 1 RHRSW Pump, GSW Pipe Rupture, Stator Cooling Runback ATWS, Power Level Control for Protection of Containment Integrity," Revision 1
  - ESG 56, "Loss of 1B42, Fuel Failure, EOP-3, EOP-4, Emergency Depressurization," Revision 1
- JPM No. 204000-04, "Recover RWCU Following a System Isolation and Establish Vessel Drain Operation," Revision 6
- JPM No. 217000-15, "Perform Required Actions for Manual Start Up of RCIC System for RPV Level Control with an Electrical Overspeed Trip and Reset (Alternate Path)," Revision 1
- JPM No. 261000-02, "Perform Required Actions for Placing One SBGT Train in Standby Following Automatic Initiation," Revision 8
- JPM No. 294001-17, "Determine Reportability (Group 1 Isolation)," Revision 1 - SRO only
- JPM No. 286000-03, "Manually Initiate Cable Spreading Room CO2 (Alternate Path)," Revision 2.
- JPM No. 212000-02, "Transfer Alternate RPS Power from 1 Y1A to 1Y2A," Revision 2
- JPM No. 211000-06, "Rod Out the SBLC Tank Level Indicator Bubbler Tube," Revision 0
- JPM No. 295016-02, "Perform Required Actions for Placing Local Transfer Stations in Emergency Status," Revision 10.

Assessments

- Operations and Emergency Planning Assessment Team Fourth Quarter (1998) Report, Section B, "Training and Qualification," Subject: "Licensed Operator Requalification - Examination Process"
- First Quarter (2000) Quality Assurance Quality Assessment Plan, "Operations Area"
- Quality Assurance Assessment Results First Quarter (2000), Section 6.0, Report B, "Licensed Operator Requalification"
- Third Quarter (2000) Quality Assurance Assessment Report, NG-00-1895
- Quality Assurance Assessment Cycle Plan - Cycle 17 (updated October 2000)
- DAEC Comprehensive Self-Evaluation (conducted in October 2000) for the following Training Programs:
  - Non-licensed Operator Training
  - Reactor Operator Training
  - Senior Reactor Operator Training
  - Shift Supervisor Training
  - Continuing Training for Licensed Personnel
  - Shift Technical Advisor Training