

IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office
CEDAR RAPIDS, IOWA

SAMUEL J. TUTHILL
SENIOR VICE PRESIDENT

15 March 1979

Mr. James G. Keppler, Director
Office of Inspection and Enforcement
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Duane Arnold Energy Center
Subject: Response to Inspection Report 78-12,
dated 6 July 1978
File: A-102 Inspection Report 78-12

Dear Mr. Keppler,

Because of the extended nature of our current outage, we have been unable to complete our commitment stated in our subject letter, dated 6 July 1978. During our outage we have been able to complete the following relative to preservation and storage of safety-related components:

- 1) The safety-related parts have been segregated in their own area in the warehouse.
- 2) Some parts have been preserved in their own protective enclosure.
- 3) The floor has been painted for dust control.

As our outage is completed, we anticipate completion of our commitment to preserve and store safety-related components in accordance with QAD 1313.1, ACP 1403.4 and ACP 1403.5 by 31 December 1979.

Yours truly,


Samuel J. Tuthill

wg
cc: E. Hammond
D. Wilson

AR 19 1979

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Central files

AUG 08 1978

Docket No. 50-331/78-11

Iowa Electric Light and Power Company
ATTN: Mr. Duane Arnold
President

IE Towers
P. O. Box 351
Cedar Rapids, IA 52406

Gentlemen:

Thank you for your letters dated July 19 and 21, 1978, informing us of the steps you have taken to correct the noncompliance identified in our letter dated June 19, 1978. We will examine your corrective action during a future inspection.

In regard to your response to noncompliance No. 2, the requirement to consider systems transients was a condition of your approval of the Westinghouse Specification E-569740, Revision A, contained in your letter IE-78-466 dated March 31, 1978. We will examine the applicability of the quoted ASME Code requirements during our review of your corrective action.

Your cooperation with us is appreciated.

Sincerely,

R. F. Heishman, Chief
Reactor Construction and
Engineering Support Branch

cc: Mr. E. L. Hammond,
Chief Engineer

cc w/ltrs dtd 7/19&21/78:
Central Files
Reproduction Unit NRC 20b
PDK
Local PDR
NSIC
TIC

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OFFICE ▶	RIII <i>Y</i>	RIII <i>STP</i>	RIII <i>A</i>	RIII <i>REK</i>	RIII <i>REK</i>	
SURNAME ▶	Yin/l <i>s</i>	Danielson	Heishman	Shafer	<i>NO</i>	<i>REK</i>
DATE ▶	8/5/78	8/7/78			8/8/78	

IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office

CEDAR RAPIDS, IOWA

July 19, 1978

JAMES A. WALLACE
VICE PRESIDENT - GENERATION

Mr. James G. Keppler, Director
Office of Inspection and Enforcement
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Duane Arnold Energy Center

Subject: Response to Inspection Report 78-11

File: A-102, Inspection Report 78-11

Dear Mr. Keppler:

This letter is in response to Mr. R. F. Heishman's letter concerning an inspection of activities at the Duane Arnold Energy Center conducted on April 6-7, 12-14 and 27-28, 1978. The following response indicates the actions which have been taken to correct the first item of noncompliance identified in Mr. Heishman's letter. Responses to infractions 2 and 3 will be forwarded by separate correspondence.

Infraction 1

10 CFR 50, Appendix B, Criterion V, states in part, that "Activities affecting quality shall be . . . accomplished in accordance with . . . instructions, procedures or drawings.

Paragraph D.7.5 of the Quality Assurance Program documented in the DAEC FSAR states in part, that "Requirements of the Iowa Electric Light and Power Company Operating QA Program are implemented and controlled by instructions, procedures and drawings."

Contrary to the above, the control of the weld filler materials was not in accordance with licensee Procedure, SPP 1503.1 requirements.

Response

1. Corrective action taken and the results achieved:

The inconel shielded electrode was removed from the carbon steel electrode oven and destroyed. The missing heat number/size label was reattached to the outside of the oven containing two sizes of ER 308 stainless steel electrode. The partly consumed ER 309 bare rods were disposed of as noted in the inspection report.

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Mr. James Keppler
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July 19, 1978

2. Corrective action to be taken to avoid further noncompliance:

The personnel responsible for the control of the welding rod storage area have been reinstructed on the requirements of Special Process Procedure 1503.1, "Welding Filler Material Control Procedure".

3. Date when full compliance will be achieved:

The discrepancies identified by the inspector were corrected the same day the inspection was made. The personnel reinstruction was documented on July 19, 1978.

Very truly yours,



J. A. Wallace
Vice President-Generation

JAW/JVS/nf

cc: Director, Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office

CEDAR RAPIDS, IOWA

July 21, 1978

IE-78-1111

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SENIOR VICE PRESIDENT - ENGINEERING

Mr. James G. Keppler, Director
Office of Inspection and Enforcement -
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

This letter is in response to your letter of June 19, 1978 concerning an inspection of activities at the Duane Arnold Energy Center conducted on April 6-7, 12-14 and 27-28, 1978. This letter provides a response to items 2 and 3 of the subject letter's Appendix. The following responses should clarify the actions which were taken and the actions which have been or shall be taken to correct the infractions, deficiencies, deviations and other items noted in your letter when appropriate.

Violation No. 2

Contrary to 10 CFR 50, Appendix B, Criterion VII, the licensee failed to review the procurement document for the 4" newly installed gate valve on the 4" DCA-6 line prior to installation and operation in that the stress report submitted by Westinghouse did not include BWR system transient considerations and the required seismic analysis.

Response

The stress report for the 4" newly-installed gate valve was reviewed on April 3, 1978. At this review it was noted that a seismic analysis had not been included with the stress report as required by the purchase specification. Contact with the valve supplier (Westinghouse Electric Corporation) provided the information that a seismic analysis had been completed and that an addendum to the valve stress report would be provided. Subsequent to receipt of the amended stress report (June 9, 1978) an in-house review of the stress report with the seismic analysis was made. Currently Iowa Electric Light and Power Company's consultants are making additional reviews of the amended stress report. Notice of approval of the stress report is forthcoming.

JUL 26 1978

Mr. James G. Keppler
IE-78-1111
page 2

In regards to the comment that the 4" gate valve procurement documentation did not include system transient considerations in the stress report, it is noted that the ASME Boiler and Pressure Vessel Code Section III does not require this design consideration for 4" and under valves. This statement is based on the following:

- (a) ASME Section III Subsection NB paragraphs NB-3512 and NB-3513 separates large and small valves in which 4" and under valves are classed as small valves.
- (b) ASME Section III Subsection NB paragraph NB-3512 states that paragraph NB-3550 concerning thermal and pressure cyclic loading is applicable to large valves.
- (c) ASME Section III Subsection NB paragraph NB-3513 which concerns small valves (4" and under) makes no reference to paragraph NB-3550.

Thus, based on adequate assurance (during the review of April 3, 1978) that the 4" gate valve procurement document stress report would be amended to include seismic considerations and that there was no requirement for system transient considerations, installation work on the valve was given approval. First work on the valve installation occurred on April 7, 1978.

Violation No. 3

Contrary to 10 CFR 50, Appendix B, Criterion II, the licensee installed on safety-related systems new mechanical snubbers which were not procured as safety-related items. Consequently, QA and performance requirements were not specified and an inadequate QC inspection plan was prepared.

Response

The mechanical snubbers which were installed were procured based on the original snubber requirements that were approved for the Duane Arnold Energy Center. The original snubber requirements could not be identified as having been purchased to safety-related criteria. The new mechanical snubbers were therefore only designated to code requirements. Subsequently we have determined that these components must be reclassified to safety-related status and a design specification has been prepared for mechanical snubbers. This specification is presently under review by the snubber manufacturer. Upon completion of this review, Iowa Electric will proceed with reclassifying the purchase documents to safety-related status.

Mr. James G. Keppler
IE-78-1111
page 3

It is planned to have completed by October 15, 1978 the proper procurement documentation and QC inspection criteria for the installed safety-related mechanical snubbers.

Sincerely yours,



Lee Liu
Senior Vice President, Engineering

LL/HWS/gan

cc: Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

H. Shearer
D. Arnold
H. Rehrauer
A-102



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

JUN 19 1978

Docket No. 50-331/78-11

Iowa Electric Light and Power
Company
ATTN: Mr. Duane Arnold
President
IE Towers
P. O. Box 351
Cedar Rapids, IA 52406

Gentlemen:

This refers to the inspection conducted by Mr. I. T. Yin of this office on April 6-7, 12-14, and 27-28, 1978, of activities at Duane Arnold Energy Center authorized by NRC Operating License No. DPR-49 and to the discussion of our findings with Mr. H. W. Shearer and others of your staff at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

During this inspection, certain of your activities appeared to be in noncompliance with NRC requirements, as described in the enclosed Appendix A.

This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office within thirty days of your receipt of this notice a written statement or explanation in reply, including for each item of non-compliance: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further noncompliance; and (3) the date when full compliance will be achieved.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter, the enclosures, and your response to this letter will be placed in the NRC's Public Document Room, except as follows. If the enclosures contain information that you or your contractors believe to be

Iowa Electric Light
and Power Company

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JUN 19 1978

proprietary, you must apply in writing to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

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

Sincerely,

R. F. Heishman, Chief
Reactor Construction and
Engineering Support Branch

Enclosures:

1. Appendix A, Notice of Violation
2. IE Inspection Report No. 50-331/78-11

cc w/encls:

Mr. E. L. Hammond,
Chief Engineer
✓ Central Files
Reproduction Unit NRC 20b
PDR
Local PDR
NSIC
TIC

OFFICE	RIII	RIII	RIII	RIII		
SURNAME	Yin/jw	Danielson	Heishman	Shafer		
DATE	6/10/78	6/12/78	6/16			

Appendix A

NOTICE OF VIOLATION

Iowa Electric light and
Power Company

Docket No. 50-331

Based on the inspection conducted on April 6-7, 12-14, and 27-18, 1978, it appears that certain of your activities were in noncompliance with NRC requirements, as noted below. These items are infractions.

1. 10 CFR 50, Appendix B, Criterion V, states in part, that "Activities affecting quality shall be . . . accomplished in accordance with . . . instructions, procedures or drawings."

Paragraph D.7.5 of the Quality Assurance Program documented in the DAEC FSAR states in part, that "Requirements of the Iowa Electric Light and Power Company Operating QA Program are implemented and controlled by instructions, procedures and drawings."

Contrary to the above, the control of the weld filler materials was not in accordance with licensee Procedure, SPP 1503.1 requirements.

2. 10 CFR 50, Appendix B, Criterion VII states in part, that "Documentary evidence that material and equipment conform to the procurement requirements shall be available at the nuclear power plant . . . prior to installation or use of such material or equipment."

Paragraph D.7.4 of the Quality Assurance Program documented in the DAEC FSAR states in part, that "Procurement document control for operating phase of the DAEC is the responsibility of and shall be performed by Iowa Electric Light and Power Company" and "Procedural requirements for implementation of operating phase procurement document controls are defined in the QA program manuals referenced in Section D.7.2 of this SAR."

Paragraph D.7.2 states in part, that "The Iowa Electric Light and Power Company Operating QA Program has been developed to endorse the intent of requirements of WASH 1284, "Guidance on QA Requirements During the Operating Phase of Nuclear Power Plants" as they relate to the operation and support of the DAEC."

Paragraph D.7 states in part that "This program is designed to meet the intent of Appendix B to 10 CFR 50 as implemented by WASH 1284 (October 26, 1974)."

Contrary to the above, the licensee failed to review the procurement document for the 4" newly installed gate valve on the 4" DCA-6 line prior to installation and operation in that the stress report submitted by Westinghouse did not include BWR system transient considerations, and the required seismic analysis.

3. 10 CFR 50, Appendix B, Criterion II states, in part that "The applicant shall identify the . . . components to be covered by the quality assurance program. . . . The quality assurance program shall provide control over activities affecting the quality of the identified . . . components, to an extent consistent with their important to safety."

Paragraph D.2.2 of the Quality Assurance Program documented in the DAEC FSAR states in part, that "The QA Program described in this Appendix applies to activities affecting safety-related functions of the structures, systems and major components listed below. Since the relationships between the listed items and plant safety are not uniform, and since such relationships are not the same for all components within any structure or system, the design requirements and other information as to implementation of the QA Program can be found elsewhere in the FSAR, in the documents and records developed to carry out the QA Program."

Contrary to the above, the new mechanical snubbers installed on safety related systems were not procured as safety related items. Consequently, QA and performance requirements were not specified and an inadequate QC inspection plan was prepared.

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-331/78-11

Docket No. 50-331

License No. DPR-49

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

Facility: Duane Arnold Energy Center

Inspection At: Duane Arnold Site, Palo, Iowa

Inspection Conducted: April 6-7, 12-14, and 27-28, 1978

Inspector: *I. T. Yin*
I. T. Yin

6/12/78

Approved By: *D. H. Danielson*
D. H. Danielson, Chief
Engineering Support Section 1

6/12/78

Inspection Summary

Inspection on April 6-7, 12-14, and 27-28, 1978 (Report No. 50-331/78-11)

Areas Inspected: Pipe crack repairs on reactor water cleanup system suction line 4" DCA-6; installation of mechanical snubbers inside the drywell. The inspection involved 39 inspector-hours onsite by one NRC inspector.

Results: Of the two areas inspected, three items of noncompliance were identified. (infraction - control of weld filler materials no in accord with procedure - Para. 1.g; infraction - inadequate procurement document control - Para. 1.h; and infraction - mechanical snubbers were not identified as safety related items - Para. 2.a)

DETAILS

Persons Contacted

Principal Licensee Employees (IECo)

E. L. Hammond, Chief Engineer, Duane Arnold Energy Center (DAEC)
D. L. Mineck, Assistant Chief Engineer, DAEC
*H. W. Shearer, DAEC Project Engineer
H. W. Rehrauer, Supervisor, Project Engineering
P. D. Ward, Nuclear Design Engineer
*R. R. Rinderman, Quality Supervisor, DAEC
*J. H. Gebert, Maintenance Superintendent, DAEC
R. A. McCracken, Quality Engineer, DAEC
R. D. Rockhill, Mechanical Maintenance Supervisor
K. Harrington, Supervising Engineer, Construction

Other Personnel

J. Longworth, Engineer, Bechtel Power Corporation
*P. H. Cotter, Quality Engineer, EDS Nuclear, Inc.

The inspector also talked with and interviewed several other licensee and contractor employees, including members of the quality, technical, and engineering staffs.

*Denotes some of those who attended the exit interview.

Functional or Program Areas Inspected

1. Pipe Cracks on Reactor Water Cleanup System Suction Line, 4" DCA - 6

The licensee forwarded to RIII a Licensee Event Report No. 78-017, dated April 7, 1978, stating "During an inspection of primary piping inside the primary containment, a small leak was observed next to the reactor water cleanup inboard manual isolation valve. Investigation revealed a hairline through wall crack on the inboard side of the valve in the heat effected zone. Subsequent UT examination revealed a crack indication in the piping just outboard of the same valve. Primary system integrity requirements are listed in Technical Specification 3.6.G"

The inspector performed followup on licensee repair of these pipe cracks.

a. Repair Work Involved

The cracked location on line 4" DCA-6 is near the 22" Recirculation Loop B, Suction Line, and is connected to the 18" DCA-5, RHR line. The repair involved: (1) replacing the existing 4" SA-312 seamless type 304 Sch. 80 pipe with 4" SA-312 seamless type 316L Sch. 80 pipe, (2) replacing the existing elbow with a new 4" pipe elbow made of ASTM A403 Grade WP 304 seamless material, and (3) replacing the existing gate valve with a 4" 900 lb ASME Section III, Class 1 gate valve.

b. Review Repair Procedures

The repair procedure, RP 61/i.e.-1, "Reactor Water Cleanup System Suction Line Weld Repair", Revision 0, dated April 4, 1978, including test prerequisites and step by step QC inspection hold points, was reviewed by the inspector and was considered to be adequate. Prior to the repair operation, a equipment mock up test for training of personnel and testing for adequacy of the repair procedure was conducted. The inspector found this mock up testing to be satisfactory.

c. Review Welding Procedures and Personnel Qualification

The following welding procedures, procedure qualification records, and welders qualifications were reviewed by the inspector. No problem areas were identified by the inspector.

- (1) IECo Special Process Procedure (SPP), No. 1506.6, "Welding Procedure Specification P8-T-Ag", Revision 2, dated October 26, 1976. The procedure provides measures for manual gas tungsten-arc welding of austenitic stainless steel using the open butt method with Argon purge backup. The Welding Procedure Qualification records included: (1) "Pr QR-W-11", for 2G position, Revision 0, dated June 5, 1975, and (2) "Pr QR-W-12", for 5G position, Revision 0, dated June 5, 1975. The WPS was qualified to ASME Section IX requirements.
- (2) Welder Performance Qualification Records for Symbols IE-38 and IE-43. The welders were qualified by guided bend test. The preparation, welding, and testing were done in accordance with ASME Section IX, 1974 including Winter 1975 Addendum.
- (3) IECo SPP No. 1503.1, "Welding Filler Material Control Procedure Specification WFMC-1", Revision 1, dated May 7, 1975.

- (4) IECo SPP No. 1504.2 "General Welding Standard (Stainless and Nickel) GWS-SN", Revision 0, dated March 5, 1975.

d. Review NDE Procedures and Personnel Qualification

The weld repair acceptance NDE was based on UT, RT, and PT. The following procedures and NDE operator and examiner qualifications were reviewed the inspector. No problem areas were identified.

- (1) IECo SPP No. 1507.1, "Nondestructive Testing Procedure, Liquid Penetrant, PT-1", Revision 2, dated September 13, 1976.
- (2) IECo SPP No. 1502.1, "Welding and Nondestructive Examination Documentation Procedure, WD-1 "Revision 1, dated May 7, 1975.
- (3) Lambert, MacGill, Thomas, Inc. (LMT), Procedure No. UT-10, "Ultrasonic Examination of Nuclear Coolant System Piping", Revision 1, dated March 1, 1977.
- (4) Nuclear Energy Service, Inc. (NES), CONAM Inspection Division, "Nondestructive Examination Procedure Radiography Method RT-1-NP for Radiography of Nuclear Power Plant Components, Piping, and Vessels," May 22, 1975.
- (5) The qualifications of the Level II NDE operators and reviewers employed by IECo, LMT, and NES were reviewed by the inspector. The personnel were qualified to ANSI N45.2.6 requirements. The qualification periods were not expired. Some of the Level II initials inspected included ELA, BC, MJD, and DWD.

e. Review of Valve Specifications

The inspector reviewed the new 4" gate valve Specification E-569740, "Gate Valve and Swing Check Valves" Revision A, dated March 27, 1978, issued by Westinghouse Electric Corporation, Electro-Mechanical Division. The licensee reviewed this specification with comments listed in two IECo interoffice memorandum, IE-78-466 dated March 31, 1978 and IE-78-474, dated April 4, 1978. No adverse comments resulted from the review.

f. Visual Inspection of Completed Weldment

The inspection areas included: (1) weld surface finish and appearance, (2) smooth transitions at valve connections,

(3) weld reinforcement thickness not in excess of ASME Code maximum, and (4) absence of surface defects including cracks, undercuts, etc. No problem areas were identified.

g. Inspection of Weld Rod Control

On April 14, 1978, the inspector inspected the licensee control of weld filler metals including carbon steel and stainless steel storage areas at the site and observed the followings:

- (1) Inconel shielded electrodes were stored together in carbon steel a electrode oven. The presence of inconel material was not identified on the outside of the oven.
- (2) Two different sizes of stainless steel electrodes (ER 308) were mixed up in one oven. Only one heat number/size was identified on the outside of the oven.
- (3) Partly consumed ER 309 bare rods were found in storage. Some of them were without identification. These items were bent and disposed by the licensed representative during the inspection.

The above conditions were not in accordance with licensee Procedure SPP 1503.1 requirements.

Similar problems in control of weld rods were identified in RIII Inspection Report 75-11. This item is considered in noncompliance with 10 CFR 50, Appendix B, Criterion V, and DAEC FSAR, Paragraph D.7.5 requirements. (331/78-11-01)

h. Review of Records

(1) QC Inspection and NDE Records

The record review included five welds on the 4" RWCU line. Weld No. 13 was on the weld-o-let pipe connection, a field weld. Weld No. 1 and No. 2 were on Valve 4" DCA-GT, Weld No. 1 was shop welded, Weld No. 2 was field welded. Welds No. 11 and No. 7 were on the pipe elbow; Weld No. 11 was a shop weld, Weld No. 7 was a field weld. Weld No. 13 was accepted by UT and PT, Welds No. 1, No. 2, No. 11, and No. 7 were accepted by RT and PT. The inspector considered the NDE acceptance measure met the volumetric and surface condition examination requirements. The Welding Checklists had been reviewed and accepted on

April 26, 1978. The NDE records had been reviewed and approved by IECO. Supervising Engineer, Construction, a Level III Examiner. The inspector reviewed the radiographs, and had no adverse comments.

(2) Review of the 4" Gate Valve Stress Report

The inspector reviewed the Westinghouse "Stress Report for Westinghouse Electro-Mechanical Division, Class 1 Nuclear Valves", Shop Order H114, Engineering Memorandum 5202, Revision 0, dated March 30, 1978. The report was certified to meet requirements of ASME Sections III, 1974, NA-3350, NB-3500 and Westinghouse Equipment Specification E 569740, Revision A.

The inspector concluded that the report did not comply with licensee comments, IE-78-466, dated March 31, 1978, on Westinghouse Specification E-569740 in that:

- (a) The fatigue stresses calculation based on the licensee specified system transients were not addressed, and
- (b) The seismic analysis required by the licensee were not included in the stress report.

This item is considered in noncompliance with 10 CFR 50, Appendix B, Criterion VII, and DAEC FSAR, Paragraph D.7.4 requirements. (331/78-11-02)

(3) Review of Weld Filler Metal Certificates

ER 316L bare rods were used in Weld No. 11 operation. The heat number for the 3/32" rods was F 22488, 771161, and the heat number for the 1/8" rods was F22488, 713465. The inspector reviewed the Certificate of Quality Conformance supplied by Sandvik Steel, Inc., and had no adverse comments. The certification was in accordance with ASME Section III and AWS 5.9-69 requirements.

Except as noted, no items of noncompliance or deviations were identified in the above areas.

2. Installation of Mechanical Snubbers

During the outage, the licensee replaced all existing hydraulic snubbers inside the drywell with Pacific Scientific Company (PSC)

mechanical snubbers. Total number of snubbers inside the drywell amounted to 83. Ten of the hydraulic snubbers were replaced by mechanical snubbers in May and September, 1977. The work performance was reviewed by the inspector.

a. Review of QA and Work Procedures

- (1) The inspector reviewed IEC Co DCR No. 684 "Hydraulic Pipe Snubbers", dated May 25, 1977, including installation instructions provided by PSC, Drawing No. 1801563-01, and considered the provision adequate.
- (2) The inspector reviewed IEC Co General Purchase Order No. 05082, dated April 25, 1977. The Order stated, "The documentation required is a certificate of compliance that design and material are in accordance with the ASME B&PV Code, Section III, Subsection NF, latest Code, Latest Addenda." No specific quality assurance, or performance requirements were specified in Order.
- (3) The inspector reviewed IEC Co Purchase Requisition No. 4968 relative to the procurement of the mechanical snubbers, the snubbers were "Q" coded to be "C" items. The "C" Item contained in IEC Co. Administration Control Procedures No. 1403.1, "Procurement Process", Revision 9, dated January 6, 1978, stated in Paragraph 3.10.1, in part that, "A nonsafety-related item which is controlled on a one for one basis by use of a Quality Part Report."
- (4) The inspector reviewed the mechanical snubber purchase specification, Bechtel Technical Specification No. 7884-M-119, Revision 2, dated April 6, 1973, and "Pipe Hangers, Supports, and Restraints for a nuclear Power Plant" No performance and acceptance criteria were included.
- (5) The inspector reviewed DAEC Quality Department Inspection plan IC/R No. DCR 681(1), "Inspection of Mechanical Snubber Installation, Maintenance Action Request, MAR No. 019838/DCR 684", dated March 20, 1978. It was found that PSC Recommended Bolt torque requirements, for the mechanical snubbers were not included in the inspection check list.
- (6) No indoctrination and training procedures were established for workers involved in the installation of the mechanical snubbers.

- (7) No inspection of the mechanical snubbers were scheduled or planned in the future.
- (8) The evaluation of the mechanical snubbers to ensure compatibility with the previously installed hydraulic snubbers was documented in a letter from the Engineering Manager of Bechtel Associates Professional Corporation, Ann Arbor, Michigan to the Supervisor, Project Engineering of IECo dated April 24, 1978.

The inspector concluded that relative to the mechanical snubber procurement and installation, the licensee was in noncompliance with 10 CFR 50, Appendix B, Criterion II, and DAEC FSAR, Paragraph D.2.2 requirements in that the snubbers were not procured as safety related items. As a result of this, (1) no QA and performance requirements were specified, and (2) inadequate QC inspection plan was prepared to verify manufacturer's recommended bolt torques. (331/78-11-03)

b. Inspection Program for the Mechanical Snubbers

The present technical specification on inspection of hydraulic snubbers does not apply to the newly installed mechanical snubbers. Because of this the licensee DAEC Project Engineer stated that his department will make inspection recommendations to ensure proper functioning of the mechanical snubbers.

This item is presently considered unresolved. (331/78-11-04)

c. Observation of Work

The following mechanical snubber installation were inspected by the inspector. Areas observed included: (1) material deterioration, (2) surface deformation, (3) tightness of fasteners, and (4) obstructions. The inspector also stroked SS-48, SS-D1, and SSB-4 smoothly and suddenly to ensure free shaft movement and unit activation.

DLA-5-SS-1, RHR, PSA-35
DCA-6-SS-48, RWCU, PSA-3
DCA-6-SS-49, RWCU, PSA-3
SS-D1-MS, Main Steam, PSA-10
SS-D2-MS, Main Steam, PSA-10
SSB-1, Recirculating Pipe, PSA-35
SSB-5, Recirculating Pump, PSA-100
SSB-11, Recirculating Pipe, PSA-35
SSA-4, Recirculating Pump, PSA-100

Improper setting on SSB-1 and SSB-11 was identified during the inspection. These deficiencies had been noticed earlier by the IECo QC, and corrective measures had been taken.

d. Review of Records

For the ten snubbers inspected, the QC records were reviewed by the inspector and concluded that the following areas had been verified:

- (1) Snubber Identification
- (2) Visual Inspection of Welds
- (3) Proper Locations
- (4) Damage and Abnormalities
- (5) Cotter Pins Installed and Secured
- (6) Cold Settings

The welding procedure applied on snubber extension was P1-A-1H, "SMAW" for all position, Revision 3, dated October 25, 1976. The procedure was qualified on May 16, 1975, Pr QR-W-5, Revision 1. Since May 16, 1975, no essential code variables had been changed in P1-A-1H.

The qualification record for welders with Identifications No. IE44, No. IE35, and No. IE2 were contained in IECo. Welder Performance Qualification Record, Pe QR-W.

Weld filler metal, Heat No. 640968, Heater No. Q-130, and Lot No. L426M1AC, the certification and laboratory data were in order.

Except as noted, no items of noncompliance or deviations were identified in the areas reviewed.

Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. The unresolved item disclosed during the inspection is discussed in Paragraph 2.b.

Exit Interview

The inspector met with site staff representatives (denoted under Persons Contacted) at the conclusion of the inspection on April 28, 1978. The inspector summarized the purpose and findings of the inspection. The licensee acknowledged the findings reported herein.

Docket No. 50-331/78-10

JUL 31 1978

Iowa Electric Light and Power
Company
ATTN: Mr. Duane Arnold
President
IE Towers
P. O. Box 351
Cedar Rapids, IA 52406

Gentlemen:

Thank you for your letter dated June 30, 1978, informing us of the steps you have taken to correct or clarify the unresolved matters identified in our Inspection Report No. 50-331/78-10. Although we find your documented response to be acceptable and useful, regulations do not require such documented responses for unresolved matters. We will examine your corrective action during a future inspection.

Your cooperation with us is appreciated.

Sincerely,

R. F. Heishman, Chief
Reactor Construction and
Engineering Support Branch

cc: Lee Liu, Senior Vice
President, Engineering
Mr. E. L. Hammond, Chief
Engineer

cc w/ltr dtd 6/30/78:
Central Files
Reproduction Unit NRC 20b
PDR
Local PDR
NSIC
TIC

61

OFFICE ▶	RIII <i>DeH/for</i>	RIII <i>DeH/for</i>	RIII <i>DeH/for</i>	RIII	
SURNAME ▶	Williams/dec	Danielson	Heishman	Shafer <i>REC</i>	
DATE ▶	7/27/78		7/28/78		

IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office

CEDAR RAPIDS, IOWA

June 30, 1978
LDR-78-24

LEE LIU
VICE PRESIDENT - ENGINEERING

Mr. R. F. Heishman, Chief
Reactor Construction and
Engineering Support Branch
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Re: Duane Arnold Energy Center
Subject: Inservice Inspection Vendor's QA Program
References: 1) Letter to Duane Arnold from R. F.
Heishman dated 5/5/78
2) IE Report No. 50-331/78-10
File: Q-72/78-10
IR-78-10-A
IR-78-10-B

Dear Mr. Heishman:

The referenced report requested clarification of intent in two areas. These areas are repeated below for convenience followed by our replies.

"Report details section 2.b.(1)

The program description of the LMT QA Manual states that it is responsive to the applicable portions of 10CFR50, Appendix B, although the manual appears to be responsive to all of the 18 criteria. The licensee agreed to resolve this matter. (331/78-10-01)"

Reply

The Lambert, MacGill, Thomas, Inc. Operating and Quality Assurance Manual has been revised and now includes a listing of the 18 criteria vs. the applicable QA procedures. This is entitled, "The Lambert, MacGill, Thomas, Inc. Operating and Quality Assurance Manual Applicability to the Eighteen Criteria of 10 CFR 50, Appendix B".

JUL 07 1978

Mr. R. F. Heishman
LDR-78-24
Page 2

"Report details section 2.b. (2)

The LMT QA Manual, Revision 8, is not clear in its intent relative to the control of final test documentation between the licensee and LMT, Inc. Although comprehensive instructions for the control of final documentation is included in each of the NDR 'Process' procedures, this consideration is not clearly established in the QA Program. The licensee committed to clarify these provisions. (331/78-10-01)"

Reply

The Lambert, MacGill, Thomas, Inc. QA Procedure No. QA-4, Rev. 5, 4-4-78 "Documentation Control" now includes a new section V on "Transmission". Section V establishes in the QA Program the control of final test documentation between the licensee and LMT, Inc.

We trust that these replies adequately provide the required clarity of intent. Copies of the cross reference between the 18 criteria and the LMT QA Procedures, and Procedure QA-4, Rev 5, 4-4-78 are on file in our Corporate Quality Assurance Office.

Very truly yours,

Sandy D. Root

Lee Liu *for*
Senior Vice President, Engineering

LL/LDR/ms

cc: D. Arnold
S. Tuthill
J. Wallace
L. Root
G. Cook



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

MAY 05 1978

Docket No. 50-331

Iowa Electric Light and Power
Company

ATTN: Mr. Duane Arnold
President

IE Towers
P. O. Box 351
Cedar Rapids, IA 52406

Gentlemen:

This refers to the inspection conducted by Mr. C. C. Williams of this office on April 12-14, 1978, of activities at Duane Arnold Energy Center authorized by NRC Operating License No. DPR-49 and to the discussion of our findings with Mr. E. L. Hammond and others of your staff at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room, except as follows. If this report contains information that you or your contractors believe to be proprietary, you must apply in writing to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

Iowa Electric Light
and Power Company

- 2 -

MAY 05 1978

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

Sincerely,

R. F. Heishman, Chief
Reactor Construction and
Engineering Support Branch

Enclosure: IE Inspection
Report No. 50-331/78-10

cc w/encl:
Mr. E. L. Hammond,
Chief Engineer
✓ Central Files
Reproduction Unit NRC 20b
PDR
Local PDR
NSIC
TIC

OFFICE	RIII	RIII	RIII	RIII		
SURNAME	Williams/bk	Danielson	Heishman	Shafer		
DATE	5/4/78	5/4/78	5/4	5-4-78		

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-331/78-10

Docket No. 50-331

License No. DPR-49

Licensee: Iowa Electric Light and Power
Company
IE Towers
Post Office Box 351
Cedar Rapids, IA 52406

Facility Name: Duane Arnold Energy Center

Inspection At: Duane Arnold Site, Palo, IA

Inspection Dates: April 12-14, 1978

Inspector: *C. C. Williams*
C. C. Williams

5/4/78

Approved By: *D. H. Danielson*
D. H. Danielson, Chief
Engineering Support Section 2

5/4/78

Inspection Summary

Inspection on April 12-14, 1978 (Report No. 50-331/78-10)

Areas Inspected: QA/QC programs, implementing procedures, work observation, and record review relative to Inservice Inspection activities. This inspection involved a total of 24 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

DETAILS

Persons Contacted

Principal Licensee Employees

- *E. Hammond, Plant Manager
- *R. Essig, EDS
- *K. Harrington, Engineering Supervisor
- R. Rinderman, Quality Assurance Supervisor

Nuclear Energy Services Company (NES)

E. Anderson, Quality Assurance Auditor

Lambert-MacGill-Thomas, Inc. (LMT)

- *T. Lambert, Technician Manager, Level III
- K. King, Inspector, Level II

Commerical Assurance Company

A. Able, Authorized Inspector, Nuclear Stamp No. 5956

*Denotes those present at the exit interview.

Functional or Program Areas Inspected

1. General

- a. Iowa Electric and Power Company performed the ISI examinations during this outage to the requirements of the Duane Arnold Technical Specification Section 3.5 and the 1971 ASME Code Section XI through Winter 1972 Addenda.
- b. Lambert-MacGill-Thomas, Inc. supplied inspection personnel, equipment, and services for pipe weld, hanger examinations and other inspection activities.
- c. Nuclear Energy Services Company supplied QA audit services relative to the ISI activities.

2. Review of ISI Program

- a. Review of the Duane Arnold Energy Center Operating Quality Assurance Manual, associated quality directives, and

administrative control procedures established that the QA program meets requirements. The following procedures are directly applicable to these activities:

- (1) Directive No. 1310.1, Revision 1, Plant Inspection
 - (2) ACP No. 1405.7 dated December 13, 1977, Nondestructive Testing
 - (3) ACP No. 1409.4 dated April 11, 1974, Plant Inservice Inspection
- b. Review of the Lambert-MacGill-Thomas, Inc., (LMT) Quality Assurance Program, Revision 10, established that this program is in substantial conformance with the requirements of 10 CFR 50, Appendix B and had been reviewed and approved by the licensee. However, two unresolved issues relative to the clarity of intent were identified.
- (1) The program description of the LMT QA Manual states that it is responsive to the applicable portions of 10 CFR 50, Appendix B, although the manual appears to be responsive to all of the 18 criteria. The licensee agreed to resolve this matter. (331/78-10-01)
 - (2) The LMT QA Manual, Revision 8, is not clear in its intent relative to the control of final test documentation between the licensee and LMT, Inc. Although comprehensive instructions for the control of final documentation is included in each of the NDE "Process" procedures, this consideration is not clearly established in the QA Program. The licensee committed to clarify these provisions. (331/78-10-02)

No items of noncompliance or deviations were identified within the areas reviewed.

3. Review of Procedures

The following nondestructive examination procedures developed by the licensee and its agents, were reviewed in detail.

LMT Procedure No. MT-1, Revision 0
LMT Procedure No. PT-1, Revision 3
LMT Procedure No. UT-1, Revision 6
LMT Procedure No. UT-3, Revision 4
LMT Procedure No. UT-4, Revision 4

LMT Procedure No. UT-5, Revision 3
LMT Procedure No. UT-6, Revision 2
LMT Procedure No. UT-10, Revision 1
LMT Procedure No. UT-11, Revision 0
LMT Procedure No. UT-12, Revision 0
LMT Procedure No. UT-13, Revision 4
LMT Procedure No. UT-14, Revision 0
LMT Procedure No. VT-1, Revision 3

No items of noncompliance or deviations were identified.

4. Observation of Work Activities

The inspector observed the visual and ultrasonic inspection of various components in safety related piping systems. These observations included preparation, instrument calibration, data acquisition, examination documentation, analysis of test results, and personnel qualification verification.

No items of noncompliance or deviations were identified.

5. Data (Record) Review and Evaluation

Review of the initial examination records, and discussion with the licensee representatives demonstrated that the Duane Arnold Technical Specification and QA/QC requirements were met.

One significant pipe weld (ASTM-304 Stainless Steel) defect was identified in that weld No. J2 (ISO No. 11A) of the Reactor Water Cleanup System (Suction) was observed to be cracked and leaking. This weld joins 4" schedule 80 piping to valve No. M-3. Further, weld Nos. J4, J18, and J19 in this system were found to have questionable ultrasonic test indications that require further analysis.

Repair plans are now being developed for the cracked and leaking "Reactor Water Cleanup" system weld No. J2 (designated CUA-SS, 4", from ISO No. 11A). Because of the difficulty in isolating this 4" pipe weld for the crack repair, the licensee plans to manufacture a mock-up of this piping configuration to "qualify the repair procedure" prior to its implementation. These activities will be examined by NRC inspectors during subsequent inspections.

No items of noncompliance or deviations were identified.

6. Material and Equipment Certification and Calibration

This ISI examined elements of the following systems and components.

Circumferential vessel welds
Vessel bottom head welds
Inner radius and bores of vessel nozzles
Main scram line "D"
Feedwater system
Core Spray system
Reactor Water Cleanup system (Suction)
Recirculation pump discharge valve bypass lines
Recirculation manifolds "A" and "B"
Required hangers and supports.

During the ISI examinations outlined above, the inspector examined and verified the adequacy of the calibration and certification documents relative to the following Lambert-MacGill-Thomas, Inc. items:

UT Device S/N-126

UT Device S/N-128

Recorder S/N 755111

Recorders S/N 71146, S/N 16732, and S/N 16731

Recorder S/N 71147

Ultra Cell II

TEAC Recorder S/N 24

Test Block, 16" Pipe Heat No. 132002

Test Block, Vessel Heat No. 00402

Test Block, 8" Schedule 80 Pipe, Heat No. HT 0407

Test Block, 10" Schedule 80 Pipe, Heat No. 651345

Test Block No. 5035

Test Blocks (Rumpus) (S/N's 5, 2, and 34)

UT Transducers: S/N A181, S/N A211, S/N 26422, S/N 38669,
S/N 0147, S/N CO 7592 (No. A18), S/N P362, S/N P377, S/N
P3114, S/N P812, S/N P8118, S/N P927, and S/N P3601

No items of noncompliance or deviations were identified with the items reviewed.

7. Personnel Qualification Documents

During the inspector's examination of the ISI activities, the following personnel technical and physical qualification documents (performance in some cases) were reviewed in detail.

T. Lambert, Level III, LMT, Inc.
J. Clark, Level I Trainee, LMT, Inc.
J. Hill, Level I, Trainee, LMT, Inc.
K. King, Level II, LMT. Inc.
W. Murray, Level II, LMT, Inc.
W. Ragner, Level II, LMT, Inc.
E. Anderson, Level II, NESCo

No items of noncompliance or deviations were identified within the areas examined.

Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of non-compliance, or deviations. Unresolved items disclosed during this inspection are discussed in Paragraph 2.b.

Exit Interview

The inspector met with site representatives (denoted in the Persons Contacted paragraph) at the conclusion of the inspection on April 14, 1978. The inspector summarized the scope and findings of the inspection.