

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-331/95002(DRP)

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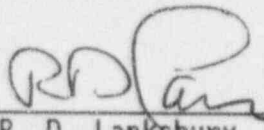
Licensee: IES Utilities Incorporated
IE Towers, P. O. Box 351
Cedar Rapids, IA 52406

Facility Name: Duane Arnold Energy Center

Inspection At: Palo, Iowa

Inspection Conducted: January 20 through February 17, 1995

Inspectors: J. Hopkins
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Approved: 

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Reactor Projects Section 3B

2/24/95
Date

Inspection Summary

Inspection on January 20 through February 17, 1995
(Report No. 50-331/95002(DRP))

Areas Inspected: Routine, unannounced inspection by the resident and region based inspectors of plant operations, maintenance, surveillance, onsite engineering, plant support, followup of previous inspection findings, and report review.

Results: An executive summary follows:

EXECUTIVE SUMMARY

Plant Operations

The plant operated at approximately 100 percent power through most of the report period, except for brief periods to conduct main steam line and turbine control valve testing. On January 28, both standby diesel generators automatically started, but were not required to load, due to inclement weather conditions. On February 17, plant power started to coast down in preparation for the refueling outage scheduled to begin on February 23.

The inspectors noted prompt response, good management involvement, and interdepartmental cooperation throughout the planning and inspection process for debris in the new fuel bundles (Section 1.1). The inspectors considered the planning and preparations for the refueling outage to be thorough with a clear emphasis on minimizing shutdown risk (Section 1.2). Failure to lock open a high pressure coolant injection system turbine steam exhaust valve after clearing a tagout resulted in a non-cited violation. The inspectors were concerned that this was a further example of inattention to detail and of a failure of the verification process as discussed in the previous inspection period (Section 1.3). Failure to correctly lock open a standby diesel generator valve, identified in an earlier report period, resulted in a non-cited violation (Section 6.1).

Maintenance

A review of instrumentation and control surveillance test procedures indicated that troubleshooting and calibration activities were satisfactorily performed in accordance with the appropriate procedures and qualified technicians performed the maintenance tasks (Section 3.1).

Engineering

No substantive concerns were identified regarding the identification, root cause evaluations, and resolutions of engineering problems.

Plant Support

A review of the radiological protection department's planning for the upcoming refueling outage identified good organization, teamwork, and exchanges of information at planning meetings (Section 5.1).

DETAILS

1.0 Plant Operations (71707) (92901)

The inspectors observed control room operations, reviewed applicable logs, and conducted discussions with control room operators during the inspection. The inspectors verified the operability of selected emergency systems, reviewed tagout records, and verified proper return to service of affected components. Tours of the reactor and turbine buildings, pump house, and river intake structure were conducted to observe equipment material condition, plant housekeeping, and cleanliness conditions, and to verify that maintenance work requests had been initiated for equipment in need of maintenance. It was observed that the Plant Superintendent, Assistant Plant Superintendent of Operations, and the Operations Supervisor were well-informed of the overall status of the plant and that they made frequent visits to the control room.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under technical specifications (TS), Title 10 of the *Code of Federal Regulations*, and administrative procedures.

1.1 New Fuel Reinspections for Metallic Debris

From February 9 to 15, 1995, all 128 new fuel assemblies were reinspected to determine if there were small metallic filings in the lower tie plate casting. The licensee identified and removed debris in one bundle and identified an imperfection in the lower tie plate casting on another. The licensee and General Electric (GE) concluded that the two bundles were acceptable for use.

General Electric notified the licensee of the potential for debris on January 24, 1995, based on problems identified at other facilities. At that time the licensee had already completed receipt inspection of the 128 new fuel assemblies and had transferred them to the spent fuel pool in December 1994. The licensee worked with other utilities and GE to prepare procedures and provide training to reinspect all 128 new fuel assemblies prior to the refueling outage (RFO) scheduled to begin on February 23, 1995. The inspectors noted prompt response to the issue and good management involvement and interdepartmental cooperation throughout the planning and inspection process.

1.2 Preparation for Refueling (60705)

The inspectors considered the licensee's planning and preparations for RFO-13 to be thorough with a clear emphasis on minimizing shutdown risk. The plant shutdown was scheduled to begin on February 23 with the main turbine generator off-line on February 24. Plant startup was scheduled for April 15 with the generator on-line April 18. In addition to refueling the reactor, major planned activities included reactor vessel

core shroud inspection, suppression pool and emergency core cooling systems strainer inspections, replacement of both of the reactor recirculation pumps' seal packages, overhaul of the "B" low pressure main turbine and the main generator, and overhaul of both reactor recirculation pump motor generators.

1.3 High Pressure Coolant Injection (HPCI) Locked Valve

On January 31, 1995, with the plant operating at approximately 100 percent power, operators identified that the HPCI turbine steam exhaust line isolation valve was open but not locked open as required. The licensee determined that the valve had been improperly restored while clearing a tagout on January 28. Administrative Control Procedure (ACP) 1410.5, "Tagout Procedure," Revision 16, required that the system be restored to normal and that the applicable Operating Instruction (OI) be referenced as necessary to determine the correct position. Additionally, the procedure required that the independent verification performed include use of the OI to compare actual component position with that required for the plant operating condition. Operating Instruction 152, "High Pressure Coolant Injection System," Revision 33, listed the required position of the valve as locked open.

The licensee's immediate corrective actions were to lock open and independently verify that the valve position was in accordance with the OI. Other corrective actions included: (1) initiating an Action Request (AR) to document the cause and corrective actions, (2) counselling the operators involved on management expectations, and (3) initiating an independent review of the issue for human performance attributes. The inspectors considered the corrective actions to be appropriate to prevent recurrence and will continue to evaluate the licensee's performance in this area.

The inspectors were concerned that this was a further example of inattention to detail and of a failure of the verification process as discussed in the previous inspection period. (See inspection report (IR) 50-331/94020(DRP) for details.) The safety significance of this error was minor because the valve was open and would have allowed the system to operate as designed. However, the locked valve program was an administrative control to ensure plant and personnel safety. Criterion V of 10 CFR Part 50, Appendix B, required, in part, that activities affecting quality be prescribed by procedures and be accomplished in accordance with these procedures. The failure of the operators to follow the requirements of procedure 1410.5 was considered a violation. This violation was not cited because the licensee's efforts in identifying and correcting the violation met the criteria specified in Section VII.B(2) of the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy, 10 CFR Part 2, Appendix C).

1.4 Core Spray System Walkdown

The inspectors performed a detailed walkdown of accessible portions of the core spray system and did not identify any concerns. Material condition and component labeling were good. Trending data showed high availability of the system over the past year, all of which was related

to planned maintenance. The inspectors identified minor inconsistencies between the Updated Final Safety Analysis Report (UFSAR) and plant configuration. The licensee planned to update the UFSAR to correct the inconsistencies.

One non-cited violation and no deviations were identified in this area.

2.0 Maintenance Observation (62703) (92902)

Station maintenance activities of safety-related systems and components listed below were observed and/or reviewed to verify that they were conducted in accordance with approved procedures, regulatory guides, industry codes or standards, and in conformance with TS.

The following items were considered during this review:

- a) compliance with limiting conditions while components or systems were removed from service,
- b) obtaining approvals before initiating work,
- c) accomplishment of activities using approved procedures,
- d) proper performance of functional testing and/or calibrations before returning components or systems to service,
- e) maintenance of quality control records,
- f) accomplishment of activities by qualified personnel;
- g) proper certification of parts and materials,
- h) implementation of appropriated and effective radiological controls and fire prevention practices, and
- i) review of work request to determine status of outstanding jobs and to assure that priority was assigned to safety-related equipment maintenance which might affect system performance.

The inspectors witnessed portions of maintenance activities on equipment such as the "A" residual heat removal service water (RHRSW) strainer, pumps, and valves; a standby filter unit solenoid; HPCI instrumentation and valves; and a containment atmosphere dilution valve. No substantive concerns or issues were identified.

No violations or deviations were identified in this area.

3.0 Surveillance Observations (61726) (92902)

The inspectors observed safety-related surveillance testing and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with TS and procedure requirements and were reviewed by personnel other than the

individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The inspectors witnessed portions of test activities on equipment such as the HPCI and RHRSW systems. No substantive concerns or issues were identified.

No violations or deviations were identified in this area.

4.0 Onsite Engineering (37551)

Selected engineering problems or events were evaluated to determine their root cause(s). The effectiveness of the licensee's controls for the identification, resolution, and prevention of problems was also examined. The inspection included review of areas such as corrective action systems, root cause analysis, safety committees, and self assessment. No substantive concerns or issues were noted as a result of the observed activities.

No violations or deviations were identified in this area.

5.0 Plant Support (71750)

Selected activities associated with radiological controls, radiological effluents, waste treatment, environmental monitoring, physical security, emergency preparedness, and fire protection were reviewed to ensure conformance with facility procedures and/or regulatory requirements. No substantive concerns or issues were identified.

The following observations were made:

5.1 Planning and Scheduling for RFO-13

The inspectors evaluated As Low As Reasonably Achievable (ALARA) review packages and attended planning meetings for selected outage work. The planning meetings attended were organized and included representatives from various work groups involved in the evolutions. Information was exchanged in a free flowing manner, and good teamwork was observed between the various departments. Specific jobs reviewed included control rod drive mechanism changeouts, refueling floor activities, and the chemical decontamination of the reactor recirculation and reactor water cleanup systems.

One item noted during the job reviews was the proposed change to the chemical decontamination filtering process. The original plan was to use cartridge filters in line with the demineralizers to remove particulates from the decontamination fluids. After discussions with the vendor, the licensee modified the plan to use a "back-washable" type filter instead. This type of filter was not used during previous chemical decontamination activities. The inspectors will continue to follow this issue during the refueling outage.

5.2 Radiation Protection (RP) Departmental Changes

The inspectors reviewed personnel changes to the licensee's RP department that had occurred since the last RP inspection in February 1994. The former head of the RP Department, who also served as the Radiation Protection Manager (RPM), left the company and was replaced by the former ALARA Supervisor. In addition, an ALARA Engineer also had left the company. These changes, plus one other, left two vacancies in the ALARA organization and one vacancy in the decontamination group. The licensee filled two of the positions with contract personnel to assist during RFO-13 and was in the process of filling the third position (ALARA group) at the time of the inspection. No performance problems were identified due to these changes. The inspectors will continue to evaluate the performance of the RP Department during RFO-13.

The inspectors reviewed the qualifications of the new RPM to verify that the individual's experience met the guidelines in American National Standards Institute 3.1 and Regulatory Guide 1.8. The inspectors determined that the new RPM met the aforementioned qualifications and no problems were noted.

No violations or deviations were identified.

6.0 Followup of Previous Inspection Findings (92901) (92902) (92903) (92904)

- 6.1 (Closed) Unresolved Item (URI) 50-331/94019-01(DRP): Standby Diesel Generator (SBDG) Valve Not Locked in Accordance With Locked Valve Program. On November 14, 1994, the inspectors identified that a SBDG valve, required to be locked open, was open, but was not locked in a manner that would preclude unauthorized operation as required by surveillance procedure 48A001-M, "Standby Diesel Generators Monthly Operability Test," Revision 19. The inspectors reviewed the licensee's corrective actions, which included training and removing these valves from the locked valve program due to their low safety significance. The inspectors considered the corrective actions to be appropriate to prevent recurrence.

Technical specification 6.8.1 required, in part, that procedures such as surveillances be implemented. The operator's failure to follow the surveillance procedure was considered a violation of TS. This violation was not cited because the violation met the criteria specified in Section VII.B(1) of the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy, 10 CFR Part 2, Appendix C). This URI is closed.

- 6.2 (Closed) Violation (331/94009-01(DRS)): Surveillance Test Procedure (STP) 41A005, "RPS Response Time Check," dated March 26, 1992, channel test steps were not signed-off as they were completed.

In response, the licensee verified that all of the procedure steps had been satisfactorily performed in 1992. The licensee stated that prior to performing this test during the 1992 refueling outage, a decision had been made to use a Gould brush recorder or a solid state timer (SST). Past performances of this STP used a brush recorder, however, the SST

was more accurate and plans were in place to permanently use the SST in future RPS timing tests. STP connection points were the same if either instrument was used. However, this caused some confusion when the technicians attempted to use the SST and several procedure steps were signed off as not applicable (N/A) when they should have been initialed. The licensee revised the STP and the test was successfully performed in 1993. In addition, the licensee strengthened Administrative Procedure No. 1406.1, "Procedure Use and Adherence," to more clearly state that STPs are continuous use procedures, and that each procedure step must be read prior to performing that step, performed in the sequence given and when required, signed off before proceeding to the next step.

The inspectors reviewed the current revision (15) of STP 41A005 and concluded the licensee had made appropriate changes to the procedure to prevent recurrence of this violation. In addition, the inspectors reviewed eight completed 1994 STPs and concluded the tests were performed in compliance with administrative procedure No. 1406.1. This item is closed.

- 6.3 (Closed) Violation (331/94009-03(DRS)): The licensee failed to perform timely and appropriate corrective actions to prevent placing nitrogen supply valve CV4371A in bypass (override) prior to receiving a Group 3 primary containment isolation signal (PCIS). As a result, containment atmospheric control system isolation valve CV4378B would not automatically close in response to a Group 3 primary containment isolation signal.

In response, the licensee was modifying the containment atmospheric control logic to isolation valve CV4378B. Design change DCP-1556 was to be implemented during Refueling Outage 13 (1995). The design change should permit CV4378B to automatically close in response to a Group 3 isolation signal with CV4371A in bypass.

The inspectors reviewed the DCP design changes and approved modification acceptance test No. MAT 1556, "Nitrogen Supply Valve Override Switch Logic Modification." The inspectors concluded the DCP would correct the design error and the MAT would test all aspects of the design change. During the period of time that this design error existed, CV4378A was capable of performing the isolation function. This item is closed.

One non-cited violation and no deviations were identified in this area.

7.0 Report Review (90713)

During the inspection period, the inspectors reviewed the licensee's monthly operating report for January 1995. The inspectors confirmed that the information provided met the requirements of TS 6.11.1.C and Regulatory Guide 1.16.

No violations or deviations were identified in this area.

8.0 Management Changes at IES Utilities, Inc.

On February 7, 1995, Mr. Lee Liu, Chairman and Chief Executive Officer of IES Utilities, Inc., announced that Mr. Blake Fisher, Jr., would assume the position of President and Chief Operating Officer and Mr. Larry Root would assume the position of Executive Vice President of IES Utilities. Mr. Fisher will be responsible for all utility business and energy production and have oversight responsibilities for the Duane Arnold Energy Center. Mr. Fisher will also retain his responsibilities as Executive Vice President and Chief Financial Officer of IES Utilities. Mr. Root will be responsible for human resources, corporate communications, government and community affairs, economic development, and other corporate activities including chairman of the corporate nuclear oversight committee. Both Messrs. Fisher and Root will continue to report to Mr. Liu.

9.0 Violations For Which a "Notice of Violation" Will Not Be Issued

The NRC uses the Notice of Violation to formally document the failure to meet a legally binding requirement. However, because the NRC wants to encourage and support licensee initiatives for self-identification and correction of problems, one violation identified in this report will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria in Section VII.B(2) of the NRC Enforcement Policy. The second violation identified in this report was identified by the NRC inspectors and will not be cited because the criteria specified in Section VII.B(1) of the NRC Enforcement Policy were satisfied. Violations of regulatory requirements identified during the inspection for which a Notice of Violation will not be issued are discussed in Sections 1.3 and 6.1.

10.0 Exit Interview (30703)

The inspectors met with licensee representatives on February 17, 1995, and informally throughout the inspection period and summarized the scope and findings of the inspection activities. The inspectors also discussed the likely information content of the inspection report with regard to documents or processes reviewed by the inspectors. The licensee did not identify any such documents or processes as proprietary. The licensee acknowledged the findings of the inspection.

10.1 Persons Contacted

- *D. Wilson, Plant Superintendent, Nuclear
- *R. Anderson, Operations Supervisor
- *P. Bessette, Supervisor, Regulatory Communications
- J. Bjorseth, Maintenance Superintendent
- *L. Henderson, Manager, Emergency Planning
- *J. Kinsey, Licensing Supervisor
- *M. McDermott, Manager, Engineering
- *K. Peveler, Manager, Corporate Quality Assurance
- *G. Van Middlesworth, Assistant Plant Superintendent, Operations and Maintenance
- R. Hite, Manager, Radiation Protection

*K. Young, Manager, Nuclear Licensing
*R. Anderson, Outage Manager

In addition, the inspectors interviewed other licensee personnel including operations shift supervisors, control room operators, engineering personnel, and contractor personnel (representing the licensee).

*Denotes those present at the exit interview on February 17, 1995.