

IES UTILITIES INC.

John F. Franz, Jr.
Vice President, Nuclear

September 12, 1994
NG-94-3192

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

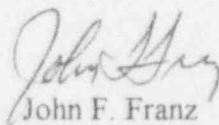
Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Reply to a Notice of Violation Transmitted with
Inspection Report 94013
File: A-105, A-102

Dear Sir:

This letter and attachments are provided in response to the Notice of Violation transmitted in Inspection Report 94013. Additionally, we have provided our assessment of the recent examples of personnel errors as requested in the cover letter to that Inspection Report. This response contains no new commitments.

If you have any questions regarding this response, please contact my office.

Sincerely,



John F. Franz
Vice President, Nuclear

JFF/TVW/mbm
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Attachments: 1. Response to Notice of Violation Transmitted with Inspection Report 94013
2. Response to Request for Additional Information Regarding Personnel Errors.

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IES Utilities Inc.
Reply to A Notice of Violation
Transmitted with Inspection Report 94013

VIOLATION

Technical specification 6.8.1. specified that written procedures covering areas such as the fire protection program and corrective maintenance actions which could have an effect on nuclear safety, be implemented.

- a. Administrative procedure 1412.4, "Impairment to Fire Protection Systems," required that prior to disabling a fire barrier, such as a fire door, compensatory measures be established.

Contrary to the above, on July 11, 1994, the door to the south steam jet air ejector room, a fire barrier, was blocked open without first establishing compensatory measures.
(331/94013-04a(DRP))

- b. Administrative procedure 1408.1, "Maintenance Action Requests," required that a maintenance instruction form (MIF) be used where more detailed instructions were required to control maintenance activities. The MIF for circuit breaker 1A402 specified that the breaker was to be "racked down" prior to starting the inspection. Administrative procedure 1406.1, "Procedure Use and Adherence," required procedure steps be accomplished in the order written, unless otherwise specified.

Contrary to the above, on July 15, 1994, inspection of circuit breaker 1A402 was started prior to "racking down" the breaker. There were no instructions on the MIF allowing steps to be performed in a different order. (331/94013-04b/(DRP))

- c. Administrative procedure 1408.1 required operating shift supervisor (OSS) review and approval of work packages prior to starting work.

Contrary to the above, on July 19, 1994, OSS review and approval of the work package on the "C" river water supply pump was not obtained prior to starting work.
(331/94013-04c(DRP))

This is a Severity Level IV violation (Supplement 1).

RESPONSE TO VIOLATION

In accordance with Inspection Report 94013, pages 10 and 12, no specific response(s) to 331/94013-04a (DRP) and 331/94013-04b (DRP) are required since the corrective actions for these examples are adequate to prevent recurrence. Therefore, this written response will only refer to 331/94013-04c (DRP).

1. REASON FOR VIOLATION

On July 19, 1994, the Duane Arnold Energy Center (DAEC) mechanical maintenance department was assigned to assist the electrical maintenance department in balancing the motor for the "C" River Water Supply (RWS) pump. The mechanics were to uncouple the pump from the motor, in accordance with the Corrective Maintenance Action Request (CMAR) developed for this activity.

During the uncoupling, it was noted that the pump needed packing. The foreman supervising the job requested that a Preventive Maintenance Action Request (PMAR) be generated to direct the packing addition. After the motor was balanced, the mechanic realized that the original CMAR for the balancing of the "C" RWS pump motor was incomplete in that steps to re-couple the pump and motor were not included. During the replanning of the CMAR, the mechanic involved in the job was provided with the PMAR for the packing addition to the pump. There was no discussion regarding the need for OSS authorization on the PMAR, and none of the participants realized that authorization had not been obtained prior to actual performance of the work.

After the mechanic recoupled the pump to the motor, he added the necessary packing to the "C" RWS pump. Upon completion of this work, the mechanic noticed that the PMAR had not been authorized by the OSS, thereby violating the Maintenance Action Request Administrative Control Procedure (ACP).

The root cause of this procedure violation was personnel error. A major contributor to this event was the distraction caused by the incomplete planning of the balancing of the "C" RWS pump motor, as reflected in the CMAR.

2. CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND RESULTS ACHIEVED

As soon as the mechanics realized that they had not received authorization to perform the work, actions were taken to notify appropriate supervision and obtain proper work authorization.

Failure to obtain the required authorization prior to starting work has a potential for endangering personnel and/or affecting equipment reliability. This aspect of this event has been emphasized to the workers in the following manner:

On July 26, 1994, the Plant Superintendent met with all maintenance shops and discussed the importance of doing the job right the first time as well as not taking short cuts.

On July 28, 1994, the mechanics involved in this event briefed other personnel in their shop on the aspects of the personnel error.

On August 1, 1994, the mechanics involved in the work were interviewed by the Assistant Plant Superintendent Operations and Maintenance. Attention to detail and self-checking to ensure administrative requirements are met prior to starting a task were stressed.

On August 4, 1994, the Maintenance Superintendent briefed the mechanical and electrical maintenance shops on the importance of the self-checking in the field to assure compliance with administrative requirements associated with work documents.

3. CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

All corrective actions have been completed.

4. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Duane Arnold Energy Center was in full compliance upon OSS review and approval of the "C" RWS pump PMAR on July 19, 1994.

**IES Utilities Inc.
Response to Request for Additional Information
Transmitted with Inspection Report 94013**

Inspection Report 94013 requested that we assess recent examples of personnel errors and indicate whether these examples signify a declining trend in human performance. Our assessment is provided below.

ASSESSMENT

Human performance is a complex subject with no singular solution for its improvement. By continuously enhancing individual facets of the facility and its processes, we will achieve our expectations for human performance. Duane Arnold Energy Center (DAEC) has invested a great deal of time and resources in an effort to improve human performance and thereby reduce the potential for plant events that may result from them.

In the fall of 1993, DAEC management commissioned a focus team whose mission was to "identify and drive changes which will result in long term improvements in human performance at the DAEC." There were ten areas that this focus team identified that if acted upon, would improve human performance at the facility. Examples of actions taken that have resulted in improvements in human performance are:

1. Defining ten elements of a good human performance culture and the subsequent endorsement of these elements by senior management.
2. Implementing 250 specific activities that will improve human performance at DAEC by the end of 1994. To date, 191 specific improvements have been effected.
3. Establishing appropriate human performance indicators and incorporating a goal to reduce human performance events into the 1994 Nuclear Generation Division goals.

The DAEC human performance trending program tracks human performance events based on three levels of significance. These three levels are as follows:

- Level One Event resulted in significant plant capacity loss, personnel injury, or impacted safe plant operation.
- Level Two Event could easily have been Level 1 given slightly different circumstances. These are "close calls".
- Level Three Event unlikely to have the opportunity to have caused a Level 1 event. Several layers of barriers existed prior to the event having the opportunity to negatively impact plant safety, capacity, or personnel safety.

To date, the ten areas that the Human Performance Focus Team identified have been implemented resulting in a marked decrease in human performance events in 1994 when contrasted to 1993. It is important to note that there have not been any Level 1 events in 1994, while Level 2 and Level 3 events are trending downward as well. If current trends continue, there will be a 28% decrease in human performance events in 1994.

On August 11, 1994, the Plant Superintendent-Nuclear convened a meeting with plant supervision to review the recent human performance events and solicit ideas to minimize their occurrences. Of the three events identified in this inspection report, only the inadvertent closing of circuit breaker 1A402 was classified as a level two event. The other two events were classified as level three, in that several barriers existed prior to the event having opportunity to significantly impact plant safety, capacity, or personnel safety.

As a result of this meeting, the Plant Superintendent-Nuclear established a cross-organizational committee to oversee human performance issues at DAEC and continue the efforts of the original human performance focus team. This committee met on August 25, 1994 and was facilitated by the Human Performance Enhancement System (HPES) Coordinator. The committee reviewed the five level two human performance events that have occurred in 1994 for commonalties, and determined that there were none. However, three of the five events identified work practices as a causal factor. Subsequent to this meeting, the Vice President-Nuclear stressed to all managers the need to perform the job correctly the first time, and that self-checking techniques and procedural adherence are more important than job expediency. The Human Performance Committee will continue to meet periodically and analyze human performance issues at the DAEC.

As previously stated, all personnel errors at the DAEC are treated seriously. Each of the issues identified by the NRC have been thoroughly evaluated and reviewed by Plant Management. We strongly encourage the reporting and documentation of all human performance events so that they may be resolved prior to causing more serious events. As evidenced by our tracking of human performance events, we believe we have achieved some success in reducing them. The recent human performance events however, emphasize the necessity for continued, aggressive attention and involvement of the entire Nuclear Division in further reducing these events. We believe we will be successful in this goal.