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DESCRIPTION:

Ltr trans the following.....

ENCLOSURES:

Abnormal Occurrence Rpt #DPR 49/74-7 of 5-30-74 re inoperable ADS valve which initiated a condition of limiting condition for operation.....

ACKNOWLEDGED

(1 cy encl rec'd)

PLANT NAME: DUANE ARNOLD

FOR ACTION/INFORMATION 6-15-74 GMC

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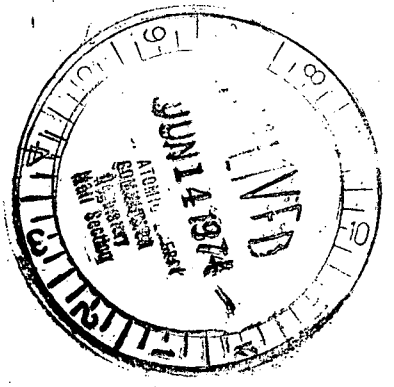


Mr. James Keppler
Regional Director
Directorate of Regulatory Operations
U. S. Atomic Energy Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

50-331

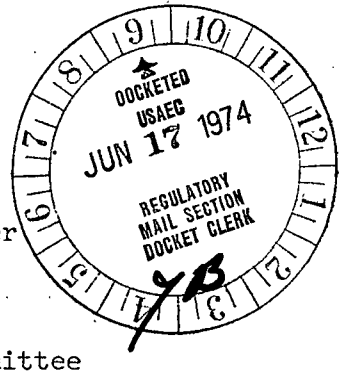
SUBJECT: Abnormal Occurrence No. DPR 49/74-7
FILE: A-118a

Dear Mr. Keppler:

In accordance with Appendix A to Operation License DPR-49, Radiological Technical Specifications and Bases for Duane Arnold Energy Center, please find enclosed a written report on the subject abnormal occurrence. Mr. Dwane Boyd of your office was notified of the occurrence by telephone at approximately 1300 hours on May 30, 1974.

Very truly yours,

G. G. Hunt
Chief Engineer
Duane Arnold Energy Center



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5364

IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office

CEDAR RAPIDS, IOWA

Subject: Abnormal Occurrence

Report Number: DPR 49/74-7

Report Date: June 7, 1974

Occurrence Date: May 30, 1974

Facility: Duane Arnold Energy Center, Unit No. 1, Palo, Iowa

Identification of Occurrence

Inoperable ADS valve which initiated a condition which resulted in a limiting condition for operation established in Technical Specification 3.5.D.2 not being met.

Conditions Prior to Occurrence

1. Reactor at 25% power.
2. Power (electrical) dropped by bypassing steam for Relief Valve Test as per DAEC document STI 26.
3. HPCI inoperable since 0630 hours on May 22, 1974, due to speed governor problems.
4. Due to inoperability of HPCI, all active components of the ADS Subsystem, the RCIC System, the LPCI Subsystem and both Core Spray Subsystems were demonstrated to be operable immediately. In addition, the RCIC System and the ADS Subsystem actuation logic were demonstrated to be operable daily thereafter.
5. Received temporary Technical Specification revision on May 29, 1974, changing the time period that HPCI could be out of service from 7 days to 11 days.

Description of Occurrence

In the course of performing STI-26, at 0430 hours on May 30, 1974, it was found that ADS Relief Valve PSV-4406 and Relief Valve PSV-4401 would not open. The other three ADS Relief Valves and the other Relief Valve operated correctly. After completion of the test the drywell was entered and the nitrogen supply valves to the ADS and relief valves were opened. The two subject valves were retested and functioned correctly.

Designation of Apparent Cause of Occurrence

The subject valves did not open because the nitrogen supply to the ADS Relief Valve and Relief Valve operators was valved off.

However, upon entering the drywell it was found that the N_2 supply to ADS Relief Valves PSV-4400 and PSV 4402 was also valved off. This condition had evidently been prevalent since at least May 16, 1974, when ADS Relief Valve PSV-4405 and Relief Valve PSV-4407 failed to open and the N_2 supply to those two valves was found to be shut off. HPCI was operable at that time so the failure of an ADS Relief Valve to open was not an abnormal occurrence. The other four N_2 supply valves were not checked at that time since the other four relief valves operated correctly. There was evidently sufficient N_2 pressure in the lines after they were valved off to operate ADS Relief Valve PSV-4406 and Relief Valve PSV-4401 one time and ADS Relief Valves PSV-4400 and 4402 at least two times.

The N_2 supply valves were not checked prior to beginning reactor operation because they were not included in the DAEC Piping and Instrumentation Diagrams and as such were not listed in the Operating Instructions.

The DAEC Chief Engineer was notified of the occurrence at 0700 hours on May 30, 1974, and the General Production Manager was notified at 0745 hours on May 30, 1974. The Office of the Directorate of Regulatory Operations for Region III was notified by telephone at 1300 hours on May 30, 1974, and by telecopier later on that same date. The occurrence was first discussed by the DAEC Operations Committee also on May 30, 1974.

Analysis of Occurrence

The ADS design is based on three operable valves. Had an incident requiring de-pressurization arisen, three ADS valves would have operated automatically and in addition a fourth safety relief valve could have been operated manually to effect the required de-pressurization.

It should be noted that only the de-pressurization function of the ADS valves was impaired by the lack of N_2. All six safety relief valves plus two safety valves were fully capable of providing over-pressure protection to the reactor vessel.

The subject ADS Relief Valves are manufactured by Dresser Industries and are a Type 6" - 13800. Although these valves did not malfunction they are being identified here since DAEC is the first nuclear plant using them.

Corrective Actions

In order to prevent this occurrence from happening again a design change was initiated on May 31, 1974, to add the N_2 supply lines to P&ID M-114 and to show the supply valves as locked open. On that same date an Operating Instruction change was initiated so that the Operating Instructions require the N_2 supply valves to be locked open.

Conclusion

It is the conclusion of this analysis that in the case of a loss-of-coolant accident with HPCI inoperable and the N_2 supply to three of the four ADS valves shut off, the reactor vessel could have been de-pressurized in a manner to meet Technical Specification requirements. It is further concluded that this did not present a hazard to the health and safety of the public.

The contents of this report including Corrective Actions and Conclusions were reviewed and approved by the DAEC Operations Committee on June 7, 1974.

G. G. Hunt
Chief Engineer
Duane Arnold Energy Center

OCS/GGH/bh