



February 15, 1974

Mr. John F. O'Leary, Director
 Directorate of Licensing
 Office of Regulation
 U.S. Atomic Energy Commission
 Washington, D. C. 20545

Dear Mr. O'Leary:

ABNORMAL OCCURRENCE NO. 250-74-2³
 FEBRUARY 15, 1974

OCCURRENCE DATE: FEBRUARY 6, 1974
 TURKEY POINT UNIT NO. 3

FAILURE OF NO. B EMERGENCY DIESEL GENERATOR TO AUTO START



A. Condition Prior to Occurrence

Unit No. 3 was recovering from a transient load decrease which was caused by the loss of vital instrument bus 3P09.

B. Description of the Occurrence

At approximately 2:30 PM on February 6, 1974, Unit No. 3 Engineered Safeguards System was energized and the reactor tripped from a safety injection system signal caused by transient operating conditions experienced following the loss of vital instrument bus 3P09. After the reactor tripped, auxiliary power supply was automatically transferred from No. 3 Auxiliary Transformer to No. 3 Startup Transformer. All Engineered Safeguards System equipment started and operated normally except that No. B Emergency Diesel Generator failed to start.

Immediate investigation by plant personnel revealed that No. B Emergency Diesel Generator Start Failure Relay indicating light was illuminated and the Lockout Relay had actuated. No electrical relay targets were indicated and no engine trip relay indicating lights were illuminated. Visual inspection of auxiliary systems showed no apparent abnormal conditions.

Immediate operator action was to reset the Lockout Relay and manually start No. B Emergency Diesel Generator. The engine started and reached rated, no-load speed with no further problems.

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C. Cause of the Occurrence

Actuation of the Start Failure Relay with no engine trip alarms or electrical relay targets present, indicates that No. B Emergency Diesel Generator failed to attain minimum speed of 200 revolutions per minute within 15 seconds.

Evaluation of results of visual inspection of auxiliary systems, the absence of engine trip relay actuation, and the successful manual start of No. B Emergency Diesel Generator concluded that one of the two air driven starting motor pinion gears did not engage properly with the engine flywheel ring gear within 15 seconds.

D. Analysis of Occurrence

The Engineered Safeguards System was energized as the result of transient operations associated with recovery from the load reduction caused by the loss of vital instrument bus 3P09. However, once the Engineered Safeguards System is actuated, all automatic actions continue until the sequence is completed. Starting both Emergency Diesel Generators is one of the automatic actions initiated when the Engineered Safeguards System is energized.

At the time of this occurrence, there was no loss of off-site power supply. Therefore the Emergency Diesel Generators were not required for emergency power.

The Safety Analyses presented in the Turkey Point Unit Nos. 3 and 4 Final Safety Analysis Report assume that only one Emergency Diesel Generator operates during the incident analyzed. The capability of one Emergency Diesel Generator to operate all required Engineered Safeguards System equipment was demonstrated during the preoperational test program. No. A Emergency Diesel Generator successfully started and was ready for service, if required. Therefore, the failure of No. B Emergency Diesel Generator to automatically start did not adversely affect the safe operation of Turkey Point Unit No. 3 and did not present any danger to the public health or safety.

The Start Failure Relay is designed to terminate the engine starting sequence if the Emergency Diesel Generator has not started within 15 seconds. This provides protection against loss of starting air supply.

Operator action is required to determine the cause of a Start Failure, take corrective action, reset the Lockout Relay, and manually start the engine. Termination of the engine starting sequence after 15 seconds ensures that a sufficient supply of starting air is available to permit manual start of the Emergency Diesel Generator. The successful start of No. B Emergency Diesel Generator by the operator, after the initial failure of the engine to automatically start, demonstrated that No. B Emergency Diesel Generator could have provided emergency power, if required during this incident.

E. Corrective Action

No. B. Emergency Diesel Generator was successfully started using an induced safety injection system signal and demonstrated satisfactory performance.

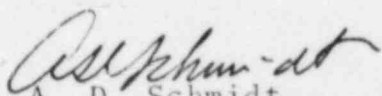
The components which could result in the failure of No. B Emergency diesel Generator to automatically start were operated through several operating cycles when the engine was manually started and automatically started to demonstrate that No. B Emergency Diesel Generator was operable. Exercising the components associated with the engine starting sequence corrected the immediate problem associated with the failure of No. B Emergency Diesel Generator to automatically start.

F. Failure Data

Failure of No. A Emergency Diesel Generator to automatically start on two previous occasions were reported as abnormal occurrences. Malfunctions in No. A Emergency Diesel Generator Start System occurred on February 1, 1974 and was discussed in Abnormal Occurrence Report No. 250-74-1.

This is the first failure of No. B Emergency Diesel Generator to automatically start.

Very truly yours,



A. D. Schmidt
Director of Power Resources

VTC:df

cc: Mr. Norman C. Moseley, Director Region II
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