



LAWRENCE LIVERMORE LABORATORY

September 8, 1980
RV 80-09-03

Mr. Paul Shemanski, Operating Reactors Assessment Branch
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Paul:

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION - UNIT 1 Docket No. 50-346 DIESEL
GENERATOR STATUS ANNUNCIATORS (TAC 07889)

- REFERENCE:
1. NRC letter dated September 2, 1977 to Toledo Edison
 2. Toledo Edison letter dated October 27, 1977 to NRC (John F. Stolz from Lowell E. Roe)
 3. NRC letter dated March 6, 1979 to Toledo Edison, (James S. Grant from Robert W. Reid)
 4. Toledo Edison letter dated May 30, 1979 to NRC, (Robert W. Reid from Lowell E. Roe)
 5. LLNL Report, UCID-18145, "Status of Evaluation and Modifications of Diesel Generator Status Annunciator Systems at Various U.S. Nuclear Power Plants," dated October 1979.

In their letter [Ref. 1], the NRC requested that the licensee (Toledo Edison) provide information regarding the status annunciator system for the diesel generators at their facility. This request for information was the result of reports from licensees on incidents where diesel generators failed to respond to automatic start signals because control switches or lockout and shutdown relays were left in shutdown condition by operators unaware of their status. The principal reasons for this lack of awareness were:

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1. the sharing of annunciator systems for both disabling and non-disabling alarm conditions;
2. wording on annunciator windows for disabling conditions which did not specifically say that diesel generator emergency start was blocked; and
3. disabling conditions which were not annunciated in the control room.

The licensee responded by letter [Ref. 2] describing the diesel generator annunciator system at Davis-Besse Nuclear Power Plant Station, Unit 1. A review of the licensee's response by the NRC resulted in the NRC providing the licensee with the staff positions of diesel generator lockout in its letter dated March, 1979 (Ref. 3] which are:

1. All shared annunciators for disability conditions should not be able to be cleared until all abnormal conditions are corrected.
2. If a diesel generator is provided with a manual shutdown lockout relay, an alarm should be provided which is worded to clearly indicate the diesel generator is incapable of an automatic start when the relay is not set.
3. An alarm should be provided which clearly indicates when the diesel generator control switch is not in the automatic position.

Additionally, the NRC in its letter [Ref. 3], requested that the licensee provide a statement that:

1. Your diesel generator system meets the staff positions,
2. will meet the staff positions, or
3. provide a justification for your objection and submit an alternate solution to the concern.....and
4. provide a description of resulting proposed modifications.

The licensee responded to the above in its letter of May 30, 1979 [Ref. 4]. In this response the licensee states:

1. Davis-Besse Unit 1 emergency diesel generator annunciators are in total compliance to Position 1.

2. The annunciator window which alarms the condition that the safety shutdown lockout relay is not reset is presently inscribed; "Emer DG TRBL TRIP". We will reword this alarm to read: "EMERG DG LOCK-OUT OR TRBL TRIP". This will clearly indicate the diesel generator is incapable of an automatic start. The station's alarm procedures will also reflect this condition.
3. The diesel generator voltage regulator control switch must be in the "ON" position for automatic operation. We propose to add a signal to the annunciator described in Position 2 response, given above, which will cause it to alarm when the voltage regulator control switch is off.

There is no control switch which removes the auto-start capability of the diesel generator. To prevent a start of the diesel generator during maintenance, the starting air supply and fuel supply are shut off by closing hand operated valves. These valves are shown in FSAR Figure Number 9-15A. This operation is strictly controlled by Plant Maintenance Procedure, AD 1844.00 and Safety Tagging Procedure AD 1803.00.

In reviewing the above response, we believe that in order that the operator be provided with accurate, complete and timely information pertinent to the status of the diesel generators, as required by IEEE Std. 279-1971, the following corrective actions are required of the licensee.

1. Disabling and non-disabling conditions for each diesel generator should be separated and annunciated using separate annunciator systems.
2. The wording on the annunciators for disabling conditions should specifically state that the diesel generator is unavailable for automatic start.
3. If the air supply and fuel supply are not alarmed when shut off, the diesel generator should be started after the maintenance has been completed to insure its availability for automatic starting.

It is recommended that the licensee be informed of the above requirements and that corrective action be implemented.


RICHARD A. VICTOR
Special Issues Program
Nuclear Systems Safety Program

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Copy to:
M.H. Dittmore
R. Epps