

**TECHNICAL EVALUATION OF THE LICENSEE'S RESPONSE
TO I&E BULLETIN 80-06
CONCERNING ESF RESET CONTROLS FOR THE
THREE MILE ISLAND NUCLEAR POWER STATION, UNIT 1**

(DOCKET NO. 50-289)

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INTERIM REPORT



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Energy Measurements Group
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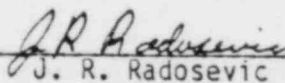
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by

D. H. Laudenbach

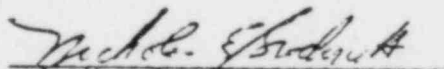
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INTRODUCTION

On March 13, 1980, the USNRC Office of Inspection and Enforcement (I&E), issued I&E Bulletin 80-06, entitled "Engineered Safety Feature (ESF) Reset Controls," to all PWR and BWR facilities with operating licenses. I&E Bulletin 80-06 requested that the following actions be taken by the licensees:

- (1) Review the drawings for all systems serving safety-related functions at the schematic/elementary diagram level to determine whether or not upon the reset of an ESF actuation signal all associated safety-related equipment remains in its emergency mode.
- (2) Verify that the actual installed instrumentation and controls at the facility are consistent with the schematics reviewed in Item 1 above by conducting a test to demonstrate that all equipment remains in its emergency mode upon removal of the actuating signal and/or manual resetting of the various isolating or actuation signals. Provide a schedule for the performance of the testing in your response to this bulletin.
- (3) If any safety-related equipment does not remain in its emergency mode upon reset of an ESF signal at your facility, describe proposed system modification, design change, or other corrective action planned to resolve the problem.
- (4) Report in writing within 90 days the results of your review, include a list of all devices which respond as discussed in Item 3 above, actions taken or planned to assure adequate equipment control, and a schedule for implementation of corrective action.

This technical evaluation addresses the licensee's response to I&E Bulletin 80-06 and the licensee's proposed system modification, design change, and/or other corrective action planned to resolve the problem. In evaluating the licensee's response to the four Action Item requirements of the bulletin, the following NRC staff guidance is also used:

Upon the reset of ESF signals, all safety-related equipment shall remain in its emergency mode. Multiple reset sequencing shall not cause the affected equipment to deviate from its emergency mode. Justification should be provided for any exceptions.

EVALUATION AND CONCLUSIONS

In a letter dated July 2, 1980 [Ref. 1], Metropolitan Edison Company, the licensee for Three Mile Island Nuclear Power Station, Unit 1 (TMI-1) replied to I&E Bulletin 80-06.

The licensee reported [Ref. 1] that the elementary diagrams for all Engineered Safeguards (ES) actuated components at TMI-1 were reviewed. It was found that the only equipment which would not remain in its emergency mode was the sampling valves that are listed below. These sampling valves are closed by a containment isolation signal. Under certain conditions, which are discussed below, the following sampling valves will return to the open position when the containment isolation signal is reset following an actuation:

- CA-V1 Pressurizer Steam Space
- CA-V2 Reactor Coolant (RC)
- CA-V3 Pressurizer Water Space
- CA-V4A Steam Generator A
- CA-V4B Steam Generator B
- CA-V5A Steam Generator A Feedwater
- CA-V5B Steam Generator B Feedwater
- CA-V13 RC Letdown

Each of the valves listed above has a control switch in the control room and on a local sampling panel. The sampling panel switches are momentary-contact CLOSE-OPEN switches with spring return to a neutral position. The control room switches are maintained-contact, three-position, CLOSE-REMOTE-OPEN. When the control room switch is in the REMOTE position, the valve may be controlled from the sampling panel. When the control room switch is in either the CLOSE or OPEN position, valve control from the sampling panel is disabled. If the control room switch is left in the OPEN position after a containment isolation signal, the valve will return to the open position when the actuation signal is reset. Since the control room switch is normally returned to the REMOTE position after use, it is unlikely that such a situation would occur. The review of the elementary diagrams showed that the remainder of the ES-actuated components at TMI-1 remain in their emergency position after reset of the actuation signal. We conclude that the licensee has complied with the requirements of Action Items 1 and 4 of I&E Bulletin 80-06 by completing the drawing review of ES-actuated components and identifying the devices that do not remain in their emergency mode upon ES actuation reset.

The licensee reported [Ref. 1] that following modifications of the ESAS systems for the revised containment isolation and block five load, a test will be conducted to assure that the response of the components is consistent with the design. The test will be conducted when plant conditions permit and is expected to be completed by February 28, 1981. We conclude that the licensee has complied with the requirements of Action Item 2 of I&E Bulletin 80-06 by providing a schedule for the performance of testing.

The licensee reported [Ref. 1] that the problem, as discussed in response to Action Item 1, will be corrected by replacing the control room switches with ones that are maintained contact in the CLOSE position and momentary contact in the OPEN position, with spring return to the REMOTE position. These control room switch modifications will be designed and installed by the first refueling outage after restart of TMI-1. In the interim, the problem will be prevented by adherence to procedures which will specifically prohibit any of the control room switches in question from being left in the OPEN position. The control room switch modifications, as presented, will assure that the identified sampling valves will remain in their emergency-mode position (CLOSE) upon ES actuation reset. We conclude, therefore, that the licensee has complied with the requirements of Action Item 3 of I&E Bulletin 80-06.

FINDINGS

Based on our review of the information and documents provided by the licensee, we find that the ESF reset controls for Three Mile Island Nuclear Power Station, Unit 1, satisfy the requirements of I&E Bulletin 80-06.

The "testing" in response to Action Item 2, scheduled for completion by February 28, 1981, will make it necessary to conduct additional testing after the switch modifications have been installed (scheduled for installation by the first refueling outage after restart of TMI-1).

REFERENCES

1. Metropolitan Edison Company letter (J. G. Herbein) to NRC/I&E (B. G. Grier), "Response to I&E Bulletin 80-06," dated July 2, 1980.